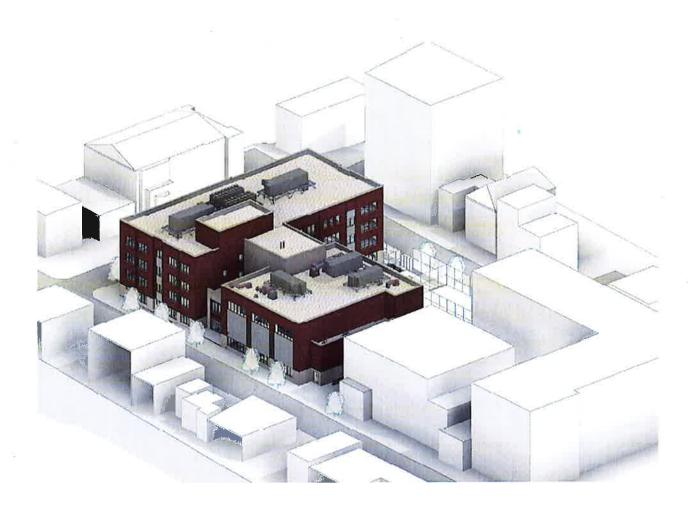


30% Design Development Green Design Report

The New York City School Construction Authority LLW #104408

New School –Academy of American Studies Queens, N.Y. 11101

4/4/17 Rev#1



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1



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New School – Academy of American Studies Queens

Prepared by SCA – In- House Design

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Project Checklist - page 1 of 2 **School Construction Authority** NYC Green Schools Rating System 2016 Submission (Check one): X Academy of American Studies (Q575) Project: Address | Zip Code: LIC, Queens, NY 11101 Submission Date: April 4, 2017 104408 LLW #: Auto Filled: Blank if Pursued, No. of Points if Not Pursued or if Not Feasible or Additional Credit Not Reviewer Design #: If Anticipated, or GSG) SCA In-House (Jerry Moy) Reviewer Sign Off: Architect: If Documented: Enter point value, (check project zipcode in or leave blank Required For all Projects if Not Feasible or If and Relevant Information and Drop-Down Menus BD&C Reference LEED for Schools 2009 Not Pursued Required if Feasible CHPS Reference Credit Names 2016 Optional Credits² GSG Phase 19 15 out of 33% of Total Points Site ✓ YES Credit Req'd - Confirm Pursuit Construction Activity Pollution Prevention NP 1 Site Selection SS 1 S 1.2R VYES Indicate Pursuit NP S 1.3R Sustainable Site & Building Layout **Development Density & Community Connectivity** Site Selection 4 4 Joint Use of Facilities, Community Access 1 SS 10 1.1.2 S 1.5R VES Credit Req'd - Confirm Pursuit NP SS Pr 2 S 1.6P **Environmental Site Assessment** 1 NF 1 **Brownfield Redevelopment** SS 3 Alternative Transportation, Public Transportation Access 4 4 S 2 1 SS 4.1 Alternative Transportation, Bicycle Storage & Changing Rooms Transportation SS 4.2 S 2.2 1 2 2 S 2,3R Alternative Transportation, Fuel-Efficient Vehicles/Parking Cap. SS 4.3/4.4 S 3.1 Site Development, Protect or Restore Habitat 1 SS 5 1 Minimize Impact on Site Site Development, Maximize Open Space SS 5.2 S 3.2 1 NF 1 S 4.1 Stormwater Design, Quality Control Stormwater Design SS 6.2 Heat Island Effect, Roof 1 Heat Island Effect S 5.1R SS 7.2 Light Pollution Reduction **Outdoor Lighting** SS 8 \$ 6.1 Site Category Sub-Total: 14 Points: 2 out of 8 Water 4% of Total Points NF WE 1,1 Water Efficient Landscaping, Reduce by 50% Outdoor Systems W 1.2 Water Efficient Landscaping, Reduce by 100% NF 2 WE 1.1 VYES Credit Rog'd - Confirm Pursuit Minimum Water Use Reduction, 20% Reduction NP WE Pr 1 Enhanced Water Use Reduction, 30% Reduction W 2.2R 2 2 WE 3 Indoor Systems Enhanced Water Use Reduction, 35% Reduction 1 NF WE 3 NF 1 Enhanced Water Use Reduction, 40% Reduction W 2.4 WE 3 Water Category Sub-Total: 2 6 7% of Total Points Energy ✓ YES Credit Req'd - Confirm Pursuit **Fundamental Commissioning** NP Credit Reg'd - Confirm Pursult **Fundamental Refrigerant Management** VES EA Pr 3 Refrigerant Management **Enhanced Refrigerant Management** EA4 E 2.2 Measurement & Verification F 3.1R 1 EA 5 Verification NO 1 YES Energy Management System Controls, HVAC & H. W. Systems NP Indicate Pursuit E 3.2R VYES Gredit Req'd - Confirm Pursuit Minimum Energy Performance NP E 4.1P EA Pr 2 Energy Efficiency **HVAC System Sizing, Avoid Oversizing** NP VYES Indicate Pursuit E 4-2R **Green Power** 2 Power E 5.1R EA 6 Energy Category Sub-Total: 3 Points: 7 out of 10 Materials ✓ YES Credit Reg'd-Confirm Pursuit Storage & Collection of Recyclables NP MR Pr 1 M 1.1P Building Reuse, Maintain 75% of Existing Walls, Floors & Roof NF MR 1.1 M 1.2 4 Building Reuse, Maintain 95% of Existing Walls, Floors & Roof NF MR 1.1 Building Reuse, Maintain 50% of Interior Non-Structural Elements NF **Efficient Material Use** M 1.4 MR 1.2 Construction Waste Management, Divert 50% from Disposal MR 2 M 1.5R 1 1 Construction Waste Management, Divert 75% from Disposal 1 MR 2 Construction Waste Management, Divert 95% from Disposal 1 1 M 1.7 MR 2 Recycled Content, 10% (post-consumer + ½ pre-consumer) MR 4 M 2.1R Recycled Content, 20% (post-consumer + 1/2 pre-consumer) 4 1 MR 4 Regional Materials, 10% Extracted, Processed & Manufactured Sustainable Materials MR 5 M 2.3 Regional Materials, 20% Extracted, Processed & Manufactured MR 5 M 2.4 ✓/ES NP Wallboard & Roof Deck Products, Mold Resistance M 2.5R Materials Category Sub-Total: See Notes on Page 2 of 2

Project Checklist - page 2 of 2 **School Construction Authority** NYC Green Schools Rating System 2016 Const Academy of American Studies (Q575) Submission (Check one): X Project: April 4, 2017 LIC, Queens, NY 11101 Submission Date: Address | Zip Code: 104408 LLW #: Auto Filled: Blank if Pursued, No. of Points if Not Pursued or if Not Feasible or Additional Credit Not Reviewer Design #: If Anticipated, or SCA In-House (Jerry Moy) Reviewer Sign Off: Architect: if Documented: 3 Enter point value, project zipcode in or leave blank Required For all Projects If Not Feasible or BD&C Reference LEED for Schools 2009 Menus Not Pursued Required if Feasible CHPS Reference Names 2009 and Infor GSG Credit ! (check NYC RPC 28% of Total Points out of 16 Indoor Environmental Quality V YES Credit Reg'd - Confirm Pursutt NP Minimum IAQ Performance IAQ Post-occupancy 1 IEQ 1 Air Flow Stations, Outside Air Intakes Construction IAQ Management Plan, During Construction 1 **IEQ 3.1** Q 2.1R AQ Pre-occupancy 1 1 **IEQ 3.2** Q 2.2R Construction IAQ Management Plan, Before Occupancy 1 1 Q 3.1R Low-Emitting Materials, Adhesives & Sealants IEQ 4.1 Low-Emitting Materials, Paints & Coatings 1 **IEQ 4.2** Q 3.2R Low-Emitting Materials Low-Emitting Materials, Flooring Systems ⁴ Low-Emitting Materials, Comp Wood & Agrifiber Products ⁴ IEQ 4.3 Q 3.3R 1 1 1 Q 3.4R **IEQ 4.4** Indoor Chemical & Pollutant Source Control Q 4.1R 1 IEQ 5 NO VYES Indicate Pursuit Pollution Source Control 535 Q 4.2R **Electric Ignition Stoves** NP NO Post Construction Indoor Air Quality NP 1 YES Indicate Pursuit Q 4.3R Controllability of Systems, Lighting IFQ 6.1 Q 5.1R 1 Controllability of Systems 1 Controllability of Systems, Thermal Comfort Q 5.2R IEQ 6.2 Thermal Comfort, Design 1 1 Thermal Comfort IEQ 7.1 Q 6.1R Daylight & Views, Daylight 75% of Classrooms Q 7.1 1 IEQ 8.1 Daylight & Views, Daylight for 90% of Classrooms 1 IEQ 8.1 Q7.2 NF Daylight & Views, Daylight for 75% of Other Spaces 1 NF Lighting and Views IEQ 8.1 Q 7.3 Daylight & Views, Views 1 NF Q 7.4 IEQ 8.2 Visual Performance, Artificial Direct-Indirect Lighting ✓ YES NO Indicate Pursuit Q 7.5R NP VES Credit Reg'd - Confirm Pursuit **Minimum Acoustical Performance** NP IEQ Pr 3 5.5.1 Q 8.1P Enhanced Acoustical Performance & Sound for Special Spaces Acoustics IEQ 9 Q 8.2 **₹YES** NO NP Indicate Pursuit SCA Q 8.3R **Acoustic Windows** IEQ Category Sub-Total: 11 5 **RPC Claimed** 0 out of Regional 0% of Total Points Use pull-down menus Regionally Defined Credit Achieved Blank 1 RP 1.1 R 1.1 Regionally Defined Credit Achieved Blank RP 1.2 R 1.2 Regionally Appropriate ⁶ 1 RP 1.3 R 1.3 Regionally Defined Credit Achieved Blank 1 Regionally Defined Credit Achieved Blank RP 1.4 Regional Category Sub-Total: 0 4 0 **Points** 6 out of 33 **Additional Credits** 13% of Total Points LEED® Accredited Professional ID₂ A 1.1R nnovation in Design A 1.2 Innovation or Exemplory Performance ID 1 Innovation or Exemplory Performance 1 ID₁ Heat Island Effect, Non-Roof 1 SS 7.1 A 2.1 Optional - Site Impact SS 6.1 A 2.2 Stormwater Design, Quantity Control 1 Active Design in a School Environment 1 A.2.3 ID 1 NF **Enhanced Commissioning** 2 A 3.1 EA3 New 6%, Renovation 4%, 4 pts 16 12 EA 1 A 3.2 Optimize Energy Performance Optional - Energy If NOT Approved, 0 pts On-Site Renewable Energy 7 EA 2 A 3.3 Enhanced Energy Management System Controls, HVAC & H.W. NP Indicate Pursuit V NO 3.3.5 A 3.4 1 Optional - IEQ IEQ 4.6 A 4.1 Low-Emitting Materials, Ceiling and Wall Systems 1 The School Building as a Teaching Tool 4 Optional - Education A 5.1 Additional Credit Category Sub-Total: 32 28 Column Totals: 25 38 32 50 Letter prefix indicates credit section (S, W, E, M, Q, R, A) LEED® Equivalent Point Total7: First number indicates the category within the section SCA Credit Name Second number indicates the specific credit within the section category Suffix "P" is added for credits that are LEED® prerequisites and therefore required of all projects Suffix "R" is added for credits that are required of all projects 1"Projects required to achieve all "feasible" credits that are possible for a particular project. 2 Projects may only pursue optional "Additional" section credits with permission from SCA unless otherwise noted. 3 During GSG submission phases, enter anticipated design and construction credits, keeping the Checklist current. 4 A maximum total value of four (4) points is allowed between these six low-emitting material credits (Q3.1, 3.2, 3.3, 3.4; A4.1) 5 RPC incentive regional credits as indicated. If the referenced credit is achieved, then the associated RPC can be claimed. 6 This credit requires project-specific energy modeling and can not be achieved by use of proto-typical modeling. 7 LL86/05 requires Certified LEED® 2009 for Schools or equivalent of a no-less stringent rating system - Minimum 40-49 Points NP: To be consistent with LEED®, the NYC GSG assigns no point value to prerequisites or non-LEED® credits. NYC GSG: Requires that all credits be attempted and proof through calcuation for those which are not-feasible



Credit Compliance Narratives

Project:	Academy of American Studies	_Date <u>: 4/4/17 Rev#1</u>	
Address: Qu	ueens, NY 11101	_Architect:SCA In-house	
LLW #:	104408	Submission: Schematic	
Design #:	N/A	Reviewer:	
· -		Reviewer Sign Off:	

Directions:

- Eleven of the Site narratives are submitted with the Schematic Submission as indicated below. All other required narratives are submitted with the Design Development submittal.
- Design Teams must submit narratives for all credits in the Site, Water, Energy, Materials and Indoor Environmental Quality sections. For the Additional Credits, all projects must include a narrative for credit A1.1R. Narratives for the other Additional Credits should only be provided when it has been determined with the SCA that the additional credit(s) are to be pursued for this project. Include explanation of why the additional credit is to be pursued on this project. For those credits subject to Regional Priority Credit, indicate whether based on the zip code that the credit is eligible to obtain the additional point.
- Narratives should summarize the design approach to credit compliance and identify the specific SCA standards (standard specifications and design requirements) to be incorporated into the design documents. Include any specific information requested under the "Credit Submittals" heading from the second page of credit text. Provide explanations and calculations where appropriate for credits that are determined to be "not feasible" for this project.

Site Credits

Site Selection

S 1.1P Construction Activity Pollution Prevention

Credit is feasible and will be pursued

The area of the Work Site is approximately 50,000 sf in area and storm water will discharge into a combined sewer (No SWPP required). The Erosion and Sedimentation Control Plan will be shown on the contract documents and installed and completed by the contractor per the project specification section 02200. The Erosion and Sedimentation Control Plan will include silt fencing, sediment traps and gravel at truck entrances. Dust control measures will be implemented throughout the duration of construction.

Applicable SCA Standard Specifications include S01352 Sustainability and 02200 Earthwork.

Credit is feasible and will be pursued

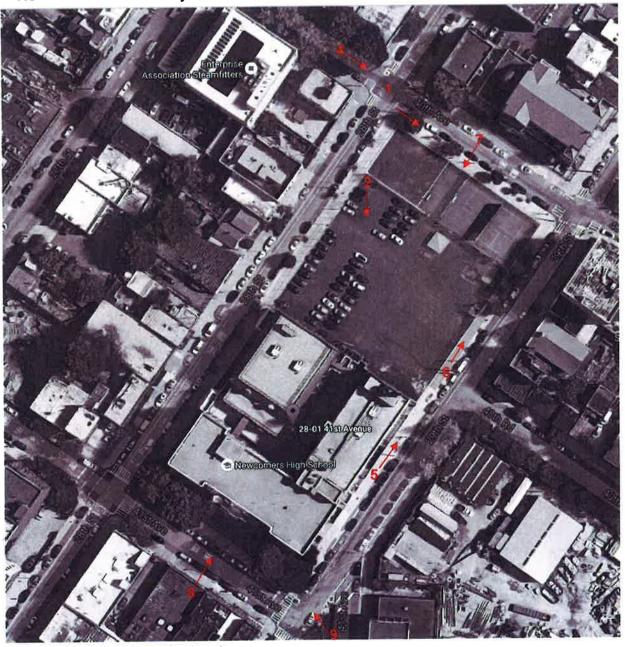
- 1. The project site is not on 'Previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by the Federal Emergency Management Agency". The site is a school play yard and previously residential buildings and laundry mat building were located on the property -see Appendix S1.2A. The site is not within a 100-year flood plane as defined by the Federal Emergency Management Based on the 2007 FEM FIRM Map, the Site is located in Zone "X", an area determined to be outside the 0.2% annual chance floodplain Appendix S1.2B.
- 2. This entire site has been developed and the location is not identified as habitat for any species on Federal or State threatened or endangered species lists. See Appendix S1.2C and S1.2D.
- 3. The site is not within 50 feet of any wetlands as defined by United States Code of Federal Regulations 40 CFR, Parts 2130-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR within setback distances from wetlands prescribed in state or local regulations, as defined by local or state rule or law, whichever is more stringent. See Appendix S1.2C.
- 4. The project site is not on previously undeveloped land that is within 100 feet of a water body, defined as seas, lakes, rivers, streams and tributaries that support or could support fish, recreation or industrial use, consistent with the terminology of the Clean Water Act. See Appendix S1.2C.
- The project site, prior to acquisition, was not public parkland. The site is a school play yard and previously residential buildings and laundry mat building were located on the property. See attached copy of aerial photograph – Appendix S1.2A.



S1.2A

Schematic

New School - Academy of American Studies



PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41ST AVENUE QUEENS, NEW YORK 11101

EXECUTIVE SUMMARY

At the request of the New York City School Construction Authority (NYCSCA), TRC Engineers, Inc. (TRC) conducted a Phase II Environmental Site Investigation (ESI) at the site of a proposed addition to Public School (P.S.) 450Q (hereafter referred to as the "Site"). The Site is located at 28-01 41st Avenue in Long Island City, Queens, New York 11101. The legal description of the Site is Block 404, portion of Lot 1.

The Site consists of an approximately 47,000 square foot (sf) asphalt-paved lot improved with a playground and parking area that is associated with a four-story school building adjoining the Site to the south. Historically, the Site was developed with 13 residences (one- and two-story), six stores (one- and two-story), and a two-story building labeled "Chinese Laundry" located on the northeastern portion of the Site. By 1936 the buildings had been razed and the Site was used as a playground for the adjacent school building. Since 1936, the Site use has remained unchanged, but the southern portion of the Site has also been used for automobile parking. A Test Fit/Sketch Study dated February 3, 2016 was provided by the NYCSCA. The Test Fit/Sketch Study considers a stand-alone, five-story building with basement to be constructed north of the existing school building in the area which is currently improved with a playground.

The Site is bounded to the north and northeast by 40th Avenue followed by an industrial building, a church with a rectory, and a religious facility; to the east and southeast by 29th Street followed by residential/commercial buildings, a hotel, a church, and a Metropolitan Transportation Authority (MTA) facility under construction; to the south and southwest by a four-story public school facility (P.S. 450Q) followed by 41st Avenue; and, to the west and northwest by 28th Street followed by residential and commercial buildings and a vacant lot.

TRC performed a Phase I Environmental Site Assessment (ESA) for the Site for the NYCSCA. The Phase I ESA Report, dated March 10, 2016, identified on-Site recognized environmental conditions (RECs)/historical RECs/vapor encroachment conditions (VECs) associated with the historic use of a former Site building as "Chinese Laundry"; the potential presence of fill material and suspect buried structures; and listings in the regulatory agency database for a closed spill case and petroleum bulk storage tanks. Additionally, one of the on-site petroleum storage tanks was closed-in-place in 2015, but updated closure documentation was not submitted to the New York State Department of Environmental Conservation, which is considered a regulatory compliance issue.

The purpose of the Phase II ESI was two-fold: 1) to determine if the RECs, VECs, and environmental concerns identified in the Phase I ESA Report require special consideration and/or affect the suitability of the Site for use as a public school facility; and, 2) to preliminarily characterize the environmental condition of the soil anticipated to be excavated for development of the proposed new addition to the Site. Phase II ESI field activities were performed on March 12, 19 and 20, 2016. The investigation consisted of a geophysical survey; the advancement of soil borings; installation of temporary soil vapor probes and groundwater monitoring wells and, the collection and laboratory analysis of soil vapor, soil, and groundwater samples.

Based on the results of the Phase II ESI, the following can be concluded:

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PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41ST AVENUE QUEENS, NEW YORK 11101

- A release from the two 15,000-gallon USTs located in the southeastern portion of the Site was not identified based on the field findings and laboratory analytical data. Note that one of the on-Site petroleum storage tanks is active and one of the tanks was closed-in-place in 2015, but updated closure documentation was not submitted to the New York State Department of Environmental Conservation.
- Petroleum- and chlorinated solvent- related VOCs were detected in soil vapor at concentrations
 exceeding background comparison criteria, with the detected PCE concentration in two samples
 exceed the NYSDOH AGV. The detected concentrations are attributable to an off-site source
 since these compounds were not detected in soil samples at the Site. Formaldehyde was not
 detected in any of the soil vapor samples.
- VOCs were not detected in the soil samples at concentrations above Unrestricted Use SCOs and/or CP-51 SCLs.
- The SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene); the metals arsenic, barium, cadmium, copper, lead, mercury and zinc; and the pesticides 4,4'-DDD and 4,4'-DDT were detected in one or more soil samples at concentrations above their respective Unrestricted Use SCOs. TRC attributes the detected SVOC, metal, and pesticide concentrations exceeding the regulatory criteria to the characteristics of fill material at the Site since there was no evidence of contamination observed in these soil samples.
- Based on the total lead and total barium concentrations, two soil samples were selected for Toxicity Characteristic Leaching Procedure (TCLP) lead and barium analyses and two soil samples were selected for TCLP lead analysis only. The results of TCLP lead analysis showed that the leachable lead concentrations in three of the four samples did not exceed the toxicity characteristic standard of 5 milligrams per liter (mg/L). The results of TCLP lead analyses for one sample (TRC-SB-1 (10-12)) was 7.6 mg/L, which exceeds the toxicity characteristic for lead of 5 mg/L. The results of TCLP barium analysis showed that the concentrations of TCLP barium did not exceed the toxicity characteristic for barium of 100 mg/L.
- Groundwater sampling analytical data revealed that metals were detected in groundwater above regulatory criteria and were attributed to the characteristics of Site soils and/or turbidity of groundwater. Four SVOCs were detected at concentrations marginally above their respective Class GA Values in two groundwater samples.

To address the RECs, VECs, and environmental concerns that require special considerations and/or affect the suitability of the Site for use as a school facility, TRC recommends the following:

- As a preventive measure an active sub-slab depressurization system and soil vapor barrier should be integrated into the building design to prevent petroleum-related and solvent-related VOCs in soil vapor from entering the proposed school building.
- Based on the results of preliminary design sampling that was completed during the Phase II ESI, a pre-design investigation should be performed in the area of soil boring location TRC-SB-1 to confirm the extent of hazardous lead impacted soil.
- If soil is to be excavated during construction activities of the proposed public school facility, TRC recommends properly characterizing the soil to identify appropriate material handling, reuse, and/or disposal requirements. Excavated material should be managed in accordance with applicable federal, state, and local laws and regulations and in consideration of the results of the

PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41ST AVENUE OUEENS, NEW YORK 11101

characterization sampling and analysis. Additionally, the project construction specifications should require completion of waste characterization sampling by the contractor.

- The Test Fit/Sketch Study provided by the NYCSCA indicates that a new stand-alone five-story building with a basement is to be constructed on the Site. The proposed new addition to the Site may encounter the two USTs during construction activities. A determination should be made regarding the continued operation of the two USTs. If the USTs interfere with construction of the proposed new addition, they should be closed and removed in accordance with NYSDEC requirements.
- After the proposed new building and grounds are constructed, if exposed soil (landscaped areas)
 are incorporated into the development of the Site, any exposed soil should be covered by a
 minimum 2-foot thick layer of environmentally clean fill.
- Although not anticipated based on the presumed depth of groundwater, if dewatering is necessary
 during school construction activities, it is expected that characterization and treatment of
 dewatering effluent may be required prior to discharge to the municipal sewer. Dewatering,
 groundwater treatment, and disposal should be performed in accordance with applicable local,
 state and federal regulations. Dewatering required during construction should be minimized to
 mitigate potential influx of contaminated water from off-site sources toward the Site.
- Any suspect ACM, LBP, PCB-containing materials, including buried structures, affected by Site development should be properly managed during such activities.

A description of the recommended engineering control and associated cost estimate is included in Appendix F.

PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41^{8T} AVENUE QUEENS, NEW YORK 11101

1.0 EXECUTIVE SUMMARY

At the request of the Industrial and Environmental Hygiene (IEH) Division of the New York City School Construction Authority (NYCSCA), TRC Engineers, Inc. (TRC) conducted a Phase I Environmental Site Assessment (ESA) for the site of the proposed addition to Public School (P.S.) 450Q (hereafter referred to as the "Site"). The Site address is 28-01 41st Avenue in Long Island City, Queens, New York 11101. The legal description of the Site is Block 404, portion of Lot 1.

A Test Fit/Sketch Study dated February 3, 2016 was provided by the NYCSCA. The Test Fit/Sketch Study considers a stand-alone, five-story building with basement to be constructed in the approximately 47,000 square foot (sf) asphalt-paved playground/parking area located north of the adjacent school building. The adjacent school building was constructed completed in 1906 with an addition completed in 1922.

The Site is bounded to the north and northeast by 40th Avenue followed by an industrial building ("Expert Machine Services"), a church with a rectory ("St. Patrick's Church"), and a religious facility ("Bayanihan Seventh-Day Adventist Church"); to the east and southeast by 29th Street followed by residential/commercial buildings, a hotel, a church, and a Metropolitan Transportation Authority (MTA) facility under construction; to the south and southwest by a four-story public school facility (P.S. 450Q) followed by 41st Avenue; and, to the west and northwest by 28th Street followed by residential and commercial buildings and a vacant lot.

In 1898, the Site was developed with 13 residences (one- and two-story), six stores (one- and two-story), and a two-story building labeled "Chinese laundry" located on the northeastern portion of the Site. By 1936 the buildings had been razed and the Site was used as a playground for the adjacent school building. Since then, the Site use has remained unchanged, but the southern portion of the Site has also been used for automobile parking.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) and environmental concerns that may affect the suitability of the Site for use as a Pre-Kindergarten facility. RECs are defined in ASTM International (ASTM) Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or, (3) under conditions that pose a material threat of a future release to the environment. Note that controlled recognized environmental conditions (CRECs) are considered to be RECs and are listed in the Executive Summary and Conclusions of this Phase I ESA. Additionally, vapor encroachment conditions (VECs) were evaluated as per ASTM E 2600-10.

Other environmental issues and conditions that, in the opinion of the environmental professional conducting the assessment, would not be considered RECs are identified in this assessment. These may include historical RECs, and/or de minimis conditions. The Phase I ESA also includes a preliminary evaluation of specific potential environmental issues or conditions that are, according to ASTM E 1527-13, considered non-scope considerations. These issues include radon, asbestos-containing material (ACM), polychlorinated biphenyl (PCB)-containing light ballasts and caulking materials, exterior lead-based paint (LBP), chemical storage, wetlands, regulatory compliance issues, dry cleaner and other industrial emissions, mold, biological agents, electromagnetic fields, and methane. The Phase I ESA included a review of federal, state, and local records, previous reports (if available) and historical documents; visual observation of the Site and adjoining properties; and interviews with selected Site representatives.

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11

PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41ST AVENUE QUEENS, NEW YORK 11101

The assessment requested by the NYCSCA is intended to identify conditions that would have the potential to impact the development and use of the Site as a Public School facility. The assessment was also conducted for purposes of environmental due diligence in order to qualify for the innocent landowner, a bona fide prospective purchaser or a contiguous property owner defense under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Phase I ESA included evaluation of the following: current and historical Site usage; current and historical usage of adjoining properties; regulatory agency records review; on-site solid waste management and disposal practices; on-site hazardous materials and petroleum products management; chemical storage, ACM, PCBs and exterior LBP management; wetlands; regulatory compliance issues; dry cleaner and other industrial emissions; radon; mold and moisture intrusion; biological agents; electromagnetic fields; and potential for methane generating materials.

Summary of RECs, CRECs, VECs and Environmental Concerns.

This Phase I ESA has revealed the following RECs, historic RECs (HRECs) and/or VECs and in connection with the Site:

On-Site RECs/HRECs/VECs:

- The Site address is listed in the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) database (ID 2-478776) for two in-service 15,000-gallon No. 6 fuel oil underground storage tanks (USTs) that were installed in 1999. The USTs are located beneath the southeastern corner of the Site (adjacent to the school building and 29th Street). According to the school's Custodial Engineer, one of the tanks was closed-in-place in 2015; however, updated PBS information and closure documentation has not been submitted to the NYSDEC.
- The Site address is listed in the New York Spills (NY Spills) database (Spill Case No. 0011166) due to a 1/12/2001 release caused by "buried leaking pipe fittings" associated with two 15,000-gallon USTs, which underlie the southeastern portion of the Site. The piping was repaired, approximately 10 cubic yards of soil were removed and endpoint soil sample results revealed no exceedances of the regulatory criteria. According to the database report, a closure report was prepared and submitted to the NYSDEC. The spill case was closed in 2003; therefore, this release is considered a HREC.
- A building formerly located on the northeastern portion of the Site was identified as "Chinese laundry".
- Potential historic fill of unknown origin and buried structures from demolition of former buildings may be present at the Site.

Off-Site RECs/VECs:

 The historic and current uses of nearby properties as dry cleaners, the historic uses of surrounding properties as garages, garages with gasoline tanks, auto repair/service shops, machine shops, motor repair shops, cleaning and dyeing facilities, undertakers, chemical labs, sheet metal shops, manufacturers, and warehouses.

PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED ADDITION TO PUBLIC SCHOOL 450Q 28-01 41ST AVENUE QUEENS, NEW YORK 11101

Adjacent and nearby facilities are listed in the following regulatory agency databases: PBS tanks; NY Spills / Leaking Storage Tanks Incident Reports (LTANKS); Inactive State Hazardous Waste Site (SHWS); Brownfield Cleanup Program; Registered Dry Cleaners; Environmental Date Resources (EDR) United States (US) Historic Auto Stations; EDR US Historic Cleaners; E-designation; and Resource Conservation and Recovery Information System (RCRIS) Generators/Transporters (RCRIS Gen/Trans).

Summary of Environmental Concerns and Regulatory Compliance Issue

This Phase I ESA has revealed evidence of environmental concerns in connection with the Site, including the following:

- Suspect ACM, LBP, and/or PCB-containing material may be present in potential fill material and suspect buried structures.
- According to the school's Custodial Engineer, one of the tanks was closed-in-place in 2015, but updated PBS information and closure documentation has not been submitted to the NYSDEC.

Recommendations

TRC recommends performing a Phase II Environmental Site Investigation consisting of a geophysical survey and the collection of soil vapor, soil, and groundwater samples for laboratory analysis to determine whether the identified RECs and/or VECs have affected the suitability of the Site for construction of an addition to P.S. 450Q. As there were parked cars and snow on the ground during the site reconnaissance, the Phase II ESI should include a visual inspection of the Site. In addition, TRC recommends performing a survey for buried structures (if present) to identify ACM, LBP, and/or PCB-containing materials which may be disturbed by redevelopment of the Site. If identified, these materials should be properly managed during such activities. Lastly, the petroleum bulk storage tank registration should be updated as required by 6 NYCRR Part 613-2.6 to reflect the current status of the closed-in-place tank.



S1.2B

Schematic

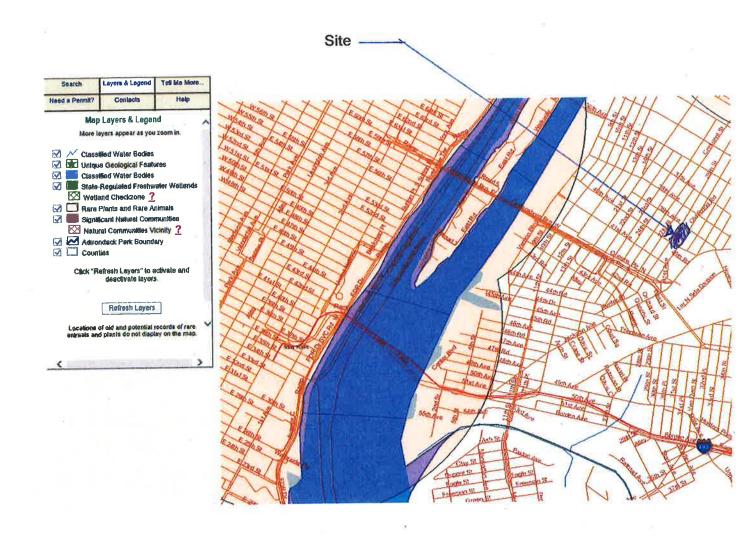
New School - Academy of American Studies





Schematic

New School - Academy of American Studies





S1.2D

Schematic

New School - Academy of American Studies

http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77

Home ▼ Critical Habitat for Threatened & Endangered Species [USFWS]



Credit is feasible and will be pursued

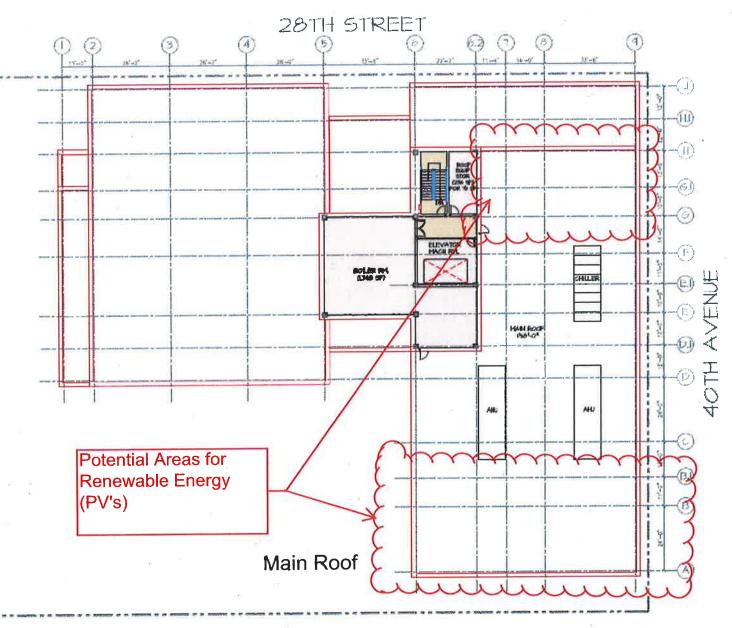
The project will meet the requirements of this credit by following the following two (2) sustainable site analyses:

- 1. Identify viable locations on roof (s) for potential renewable energy generation.
- There are areas on the Main Roof and the Gym Roof where renewable energy generation units (PV's) can be installed.

See Appendix S1.3

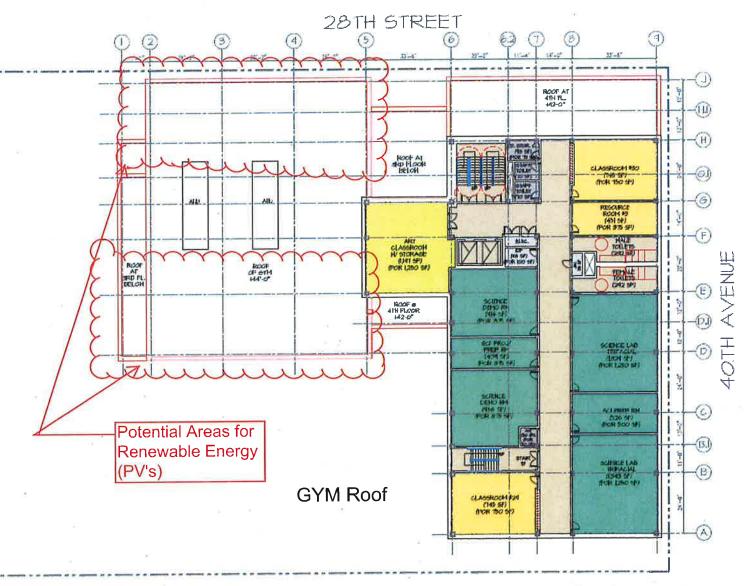
- 2. Plot Shadow pattern from surrounding buildings onto project site to optimize daylight:
 - The proposed building is four stories and slightly higher than the adjacent buildings. The
 placement minimizes the casting of shadows on and from shadows from the existing buildings.
 The only time shadows are cast on the adjoining properties is in the winter solstice. The
 shadow is cast for only a few hours during this period. The adjacent school building also casts a
 showdown during this period on the proposed new building.
 - See shadow plots Appendix S1.3B
- 3. The building is oriented on an a mostly east west axis to maximize natural daylight into interior spaces.

See Appendix S1.3 A



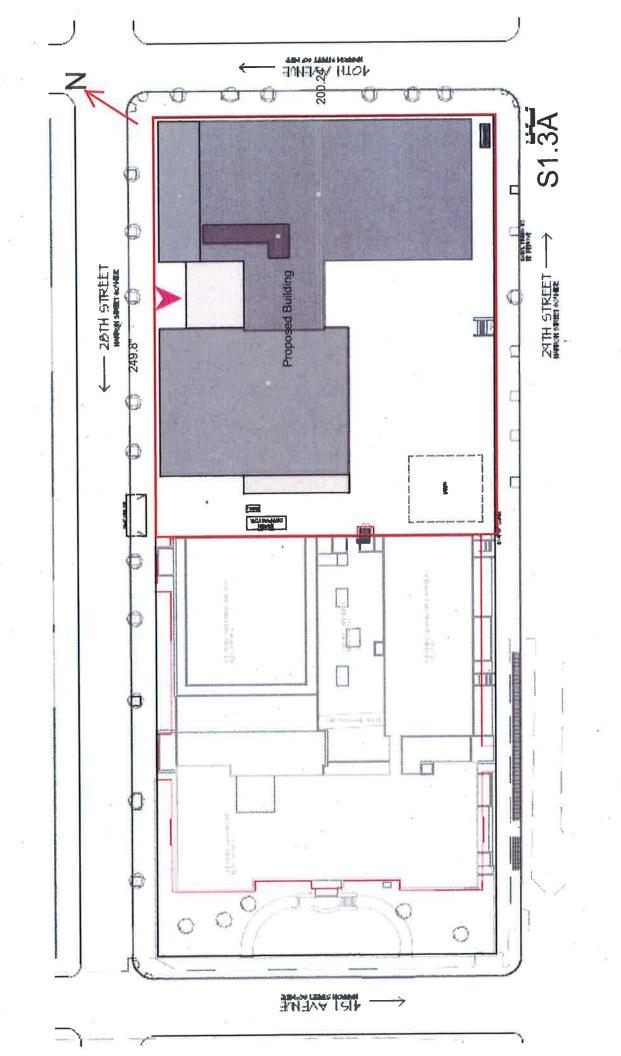
29TH STREET

S1.3



29TH STREET

S1.3.2



SHADOW STUDY







S 1.4 Development Density & Community Connectivity

Credit is feasible and will be pursued

The project site complies with option 1 of this credit by:

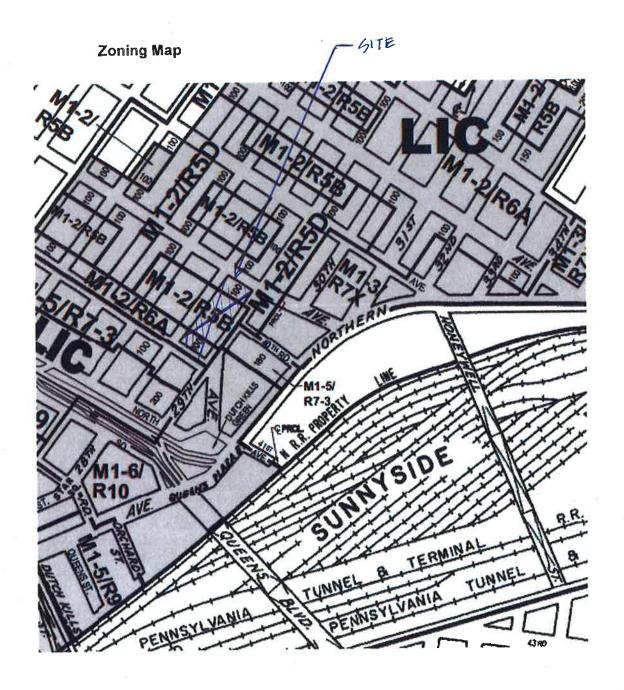
- 1. The project is on a previously developed site that is within half a mile of a residential zone neighborhood with an average density of 10 dwelling units per acre and within half a mile radius of at least 10 basic services and with pedestrian access between the building and the services.
- 2. The existing property is situated within an M-1/R6A, M1-2/R5B and M1-2/ R5d Long Island City Mixed use District and Special Mixed Use District. See attached Appendix S1.4A.
- 3. The ten basic services within the areas are shown on attached Appendixes S1.4B and S1.4C "Community and Connectivity Form"



S1.4A

Schematic

New School Academy of American Studies



DEVELOPMENT DENSITY & COMMUNITY CONNECTIVITY FORM Credit \$1.4



NYC Green Schools Rating System

Project:	Academy of American Studies				
Address:	LIC 11101		Architect:	SCA In-house	
LLW #:	104408	Design #:	Preparer:	J. Dias	
Date:	9/30/2016		Telephone:		8442

Fill in either Option 1 or Option 2

Option 1 - Community Connectivity (Submit site plan with basic service locations noted matching table numbering and separate plan verifying dwelling unites per acre)

Plan Key Identification	Business Name within 1/2 mile (2,640 feet) radius and accessible by pedestrian access	Service Type	
1	Friendly's	Restaurant	
2	Good Taste Chinese Food	Restaurant	
3	Queenbride Day Care Center	Day Care	
4	SPACE Gallery	Museum	
5	Growing Up Green Charter School	School	
6	Queens Library LIC	Library	
7	Queensbridge Medical Center	Medical/Dental	
8	Evangel Church	Place of Worship	
9	Echo Pharmacy	Pharmacy	
10	Green Apple Supermarket	Supermarket	

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	2	0.00	
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			/4
19			
nined Total Lot Area in S	SF 0		
		0.00	
t	Combined Total	Combined Total Lot Area in Acres	bined Total Lot Area in SF 0 Combined Total Lot Area in Acres 0.00 Combined Total Building Gross Area in SF

Development Density = SF/Acre of Gross Bulding Square Footage = #DIV/01

If number above is greater than or equal to 60,000 sf/acre, then project complies using this criteria.

Note: Include project site in development density calculations

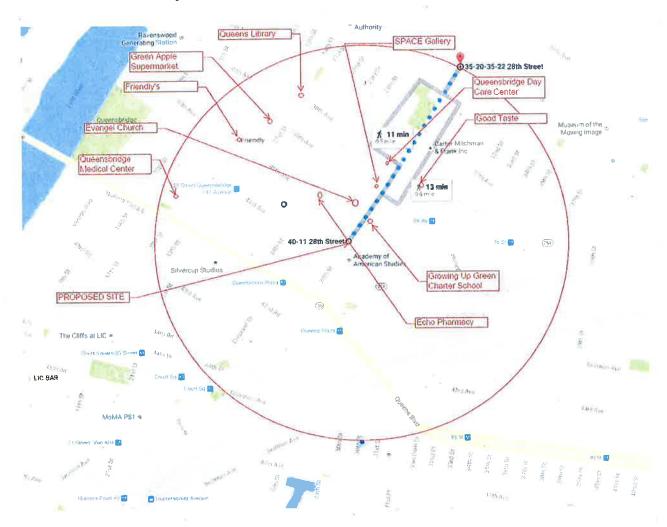
^{*} Lot Area and Building Gross Area information may be obtained through oasisnyc.net. This site is a project of the New York City Open Accessible Space Information System Cooperative (OASIS).



S1.4B

Schematic

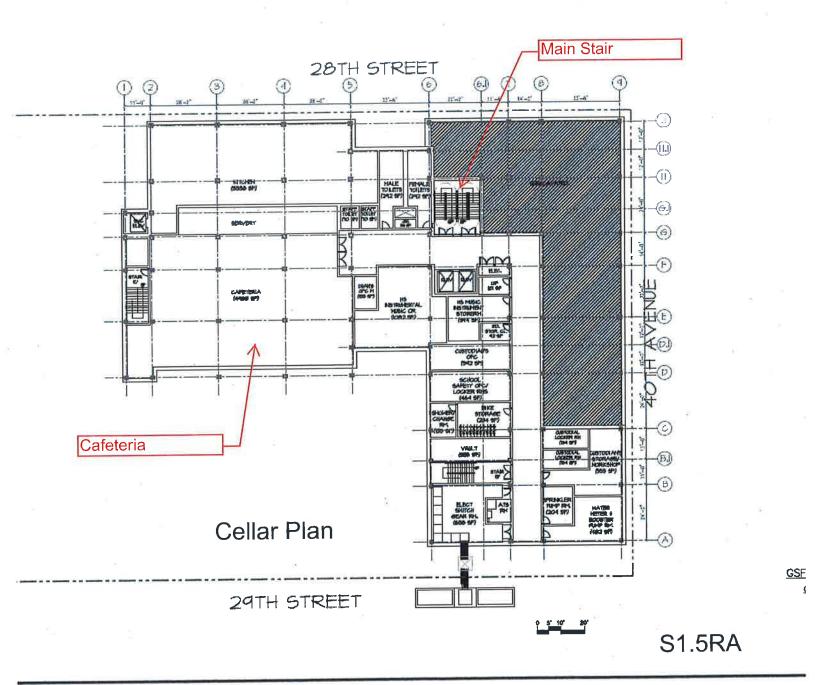
New School Academy Of American Studies



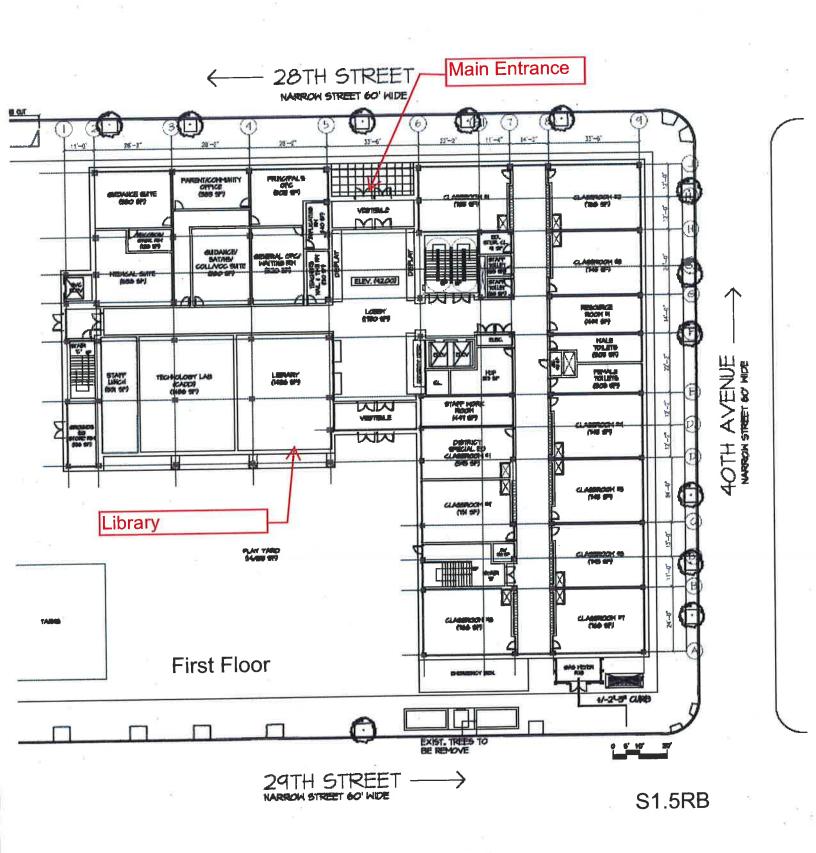
Credit is feasible and will be pursued

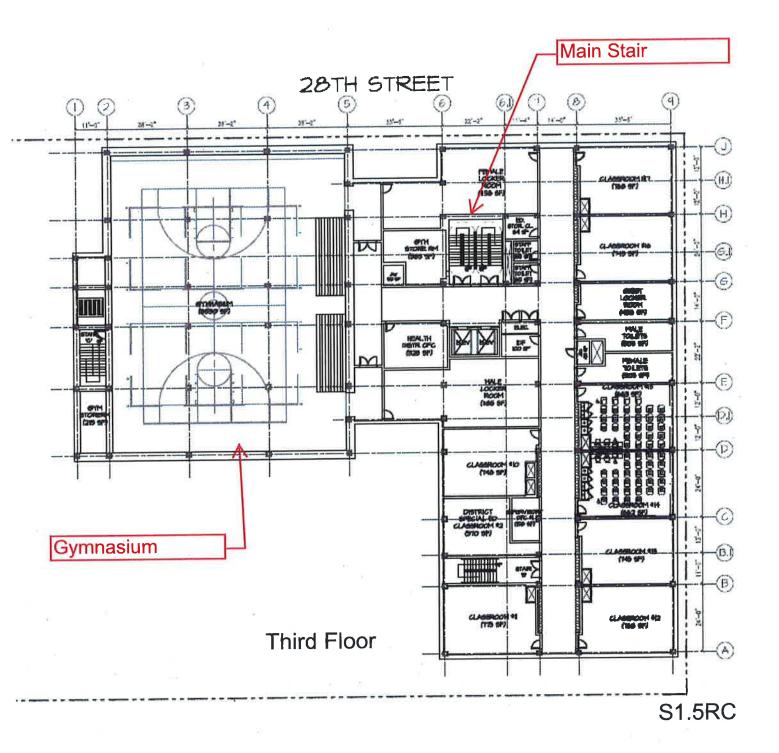
The project design Program of Requirements for the new building includes a Gymnasium, Cafeteria and Library that have community access. The Public Assembly spaces are close to the main entrance to the new building. The Library is on the first Floor, the Cafeteria is in the Cellar and the Gymnasium is on the Third Floor all close or accessible to the main entrance Lobby and stair.

See attached Appendix S1.5R



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Credit is feasible and will be pursued

The SCA/IEH has completed Phase I and Phase II Environmental Assessment of the Site on 3/10/16 and 6/8/16. The issues that will be reviewed and recommended are:

- Soil testing and remediation as required during construction.
- There are two (2) fuel oil underground storage tanks. One of the fuel tank might have been closed—in-place; updated PBSA information and closure documentation needs to be submitted to NYSDEC.
- Installation of a vapor barrier below the new building and sub-slab depressurization system will be required.
- Any exposed soil (landscaped areas) must be covered with at least two feet of environmentally clean fill.
- Properly characterizing and disposing of excavated soil during construction.
- Suspect ACM, LBP and/or PCB containing materials should be properly managed during construction or demolition activities.

The Phase I and II Report Executive Summaries are attached -- see appendix S1.2 A.

S 1.7 Brownfield Redevelopment

Credit is not feasible and will not be pursued

As per the Phase II Report, the site is not defined as a Brownfield by a New York City, New York State or federal government agency.

Credit is feasible and will be pursued

The project site is in compliance with the requirements of option 1 of this credit.

The site is less than half a mile away from N.Y.C. Transit #7, "F", "N" and "Q" subway lines (.3 of a mile) from proposed entrance.

See attached map indicating paths of travel and distances. Appendix S2.1A

Alternative Transportation, Bicycle Storage & Changing Rooms NARRATIVE AT SCHEMATIC SUB.

Credit is feasible and will be pursued

This credit will be achieved for this project site by providing secure bicycle storage within 200 feet of the main entrance to comply with Zoning. Interior space will be provided to accommodate 11 bicycles (1 per 10,000 sq. feet as per NYC Zoning) balance will be on the exterior to comply with Green School Guide. A shower facility accessible from the corridor will be provided on the first floor. All will be in compliance with DR 1.3.1.12 (storage) and DR 2.3.3 (racks) and Specification Sections 02870 and 05700.

Interior space to accommodate 12 bicycles (1 per 10,000 sq. feet as per NYC Zoning) and 50 bicycles on the exterior (total = $.05 \times 1230$ FTE total occupants = 62) will be provided.

Based on a FTE staff of 120, one (1) shower will be required (.005 x 120 =. 6).

1230

One shower/changing room will be provided on the First Floor close to the bike storage. All will be in compliance with DR 1.3.1.12 (storage) and DR 2.3.3 (racks) and Specification Sections 02870 Site and Street Furnishings and 05700 Ornamental Metals.

See Exhibits S2.2A and B

<u>UCC</u>	<u>:up</u>	anc	<u>y Ca</u>	licula	<u>llon.</u>
No.	of	typi	cal c	lassi	room

is $(9^{th}$ to 12th grade): 30, occupants = 900

No. of SE classrooms: 2, occupants = 30 No. of Science Rooms 4, occupants = 120 = 30 Art Room = 30 Tech Lab

Total	1110
FT Staff (1 per classrooms) 5 Adults for Lobby 1 Adult for every 100sf (office) Aids (.025 X969) Kitchen Staff (.01 x 969) PT Staff Visitors	38 5 36 24 10 5 2
	120

Project meets the requirements for this credit.

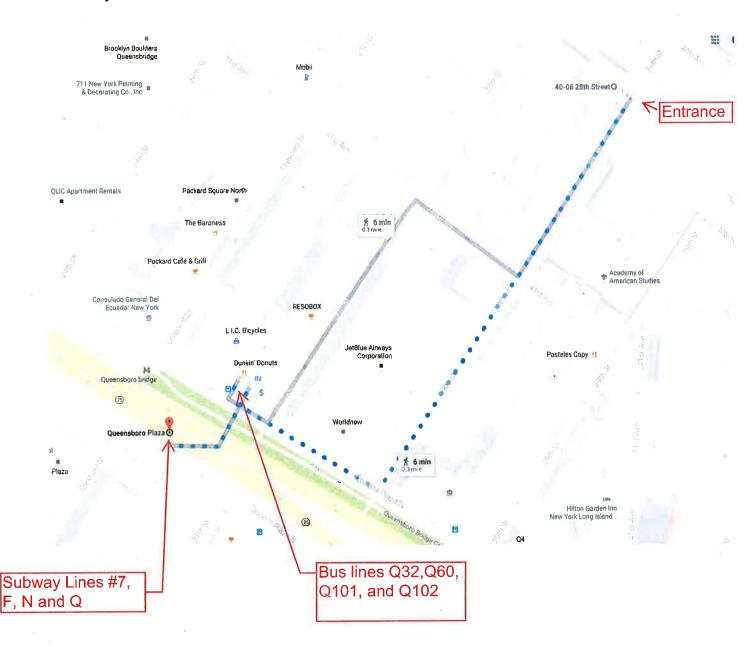
Total FTE =

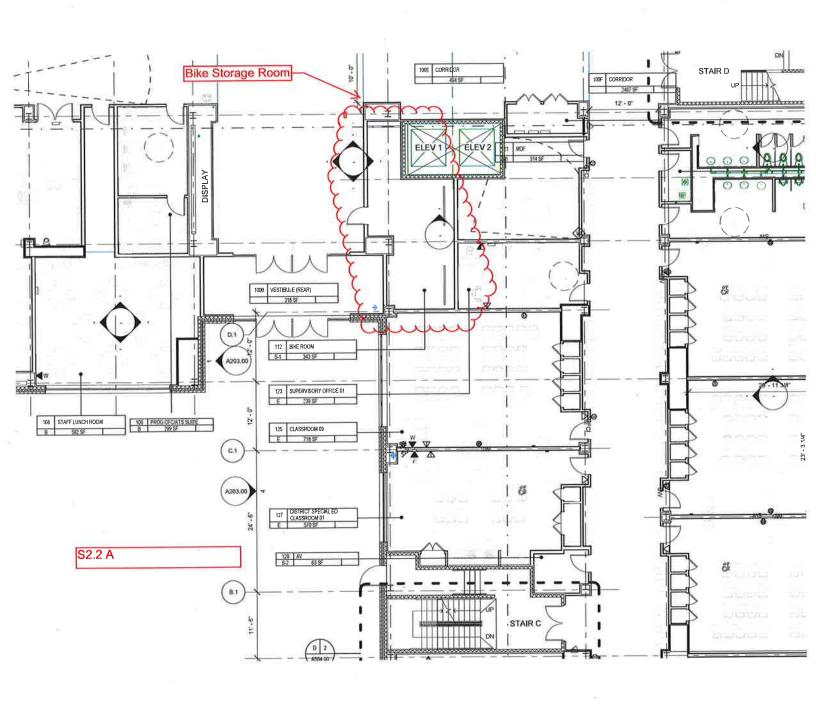


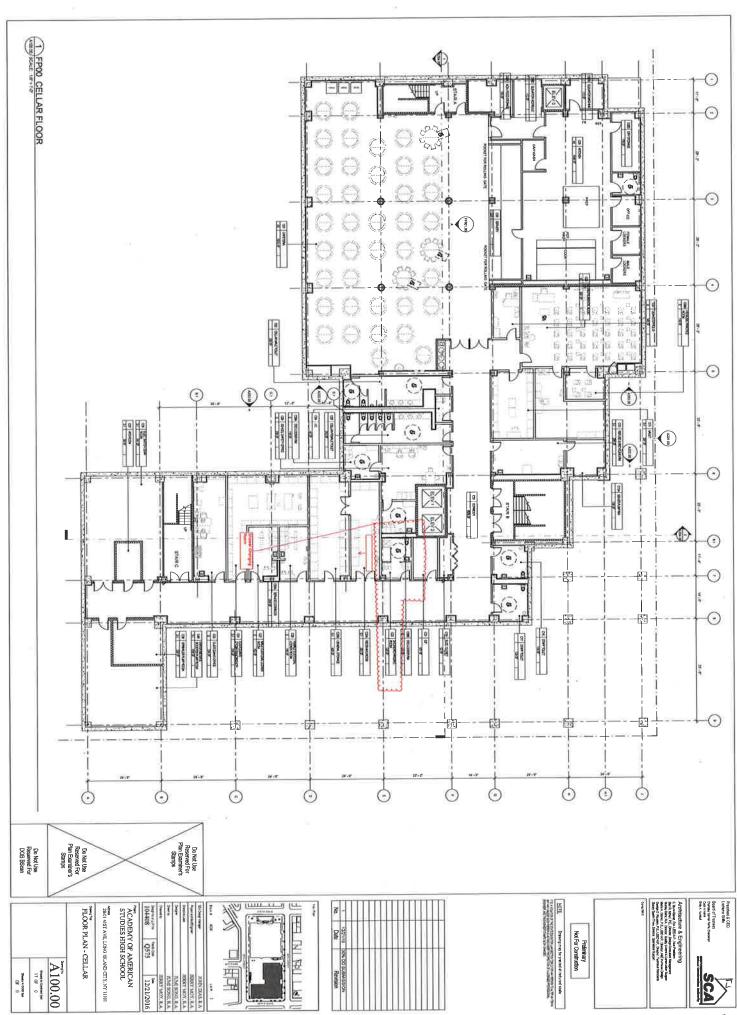
S2.1A

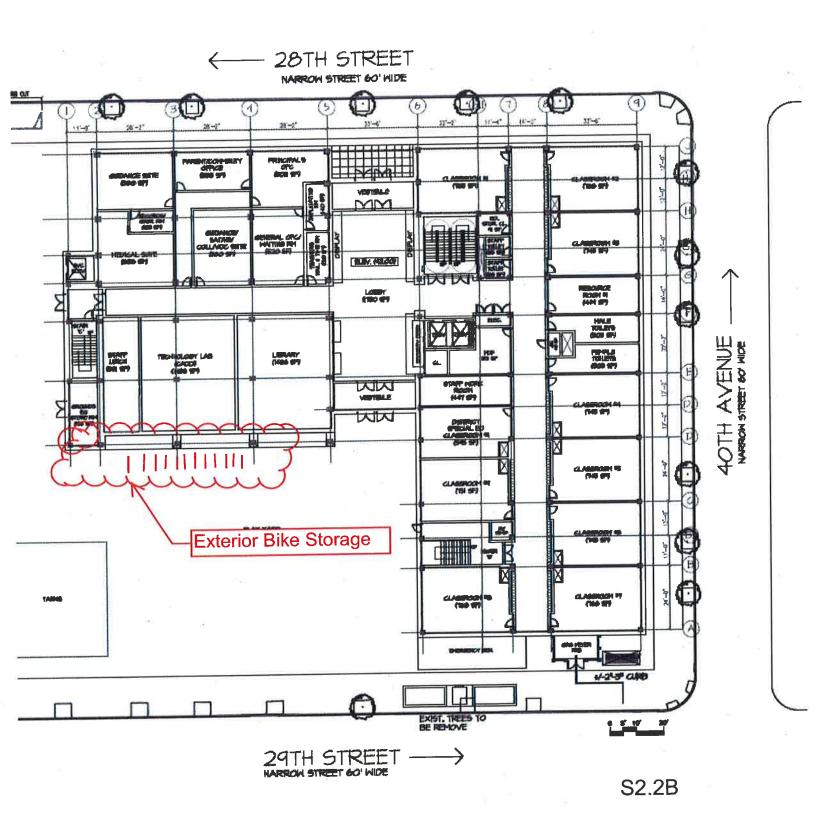
Schematic

Academy of American Studies









Credit is feasible and will be pursued

This credit will be achieved for this project site. No new on-site parking will be provided. Students attending the school and staff live nearby or will take public transportation to the school.

Credit is not feasible and will not be pursued

This credit is not feasible for this project. The High School will have exterior paved areas for exercise and recreation. The landscaped area (0 sq ft planned) is less than the greater of 50% of the site area (less the building footprint) and/or 20% of the site area including the footprint).

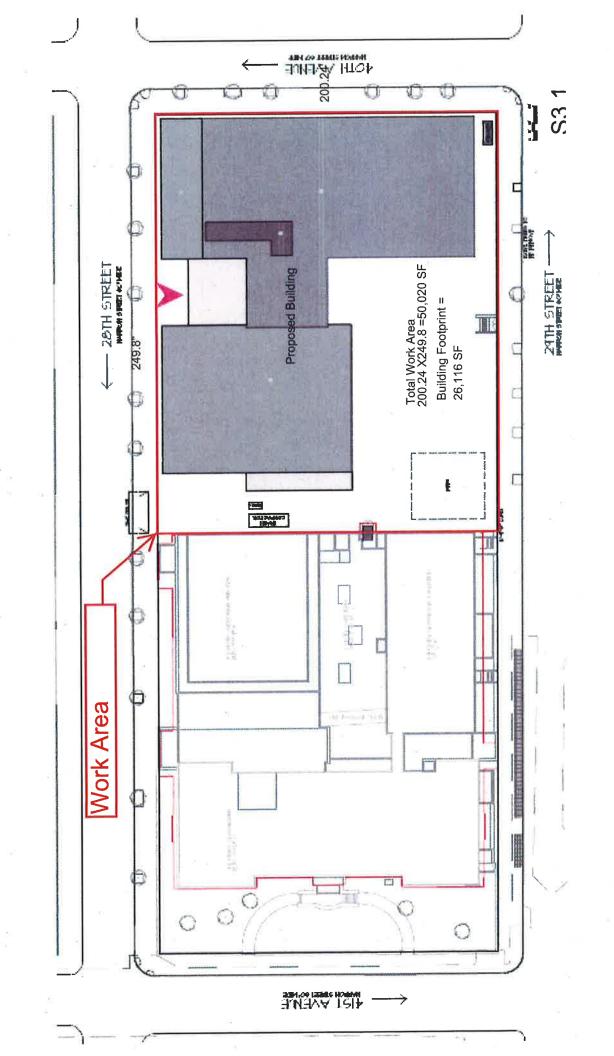
Site = 50,020 SF Building Footprint = 26,116 SF

50,020 - 26,116 = 23,904 SF (.5) =11,952 SF

50,020 (.20) = 10,004 SF

11,952 > 0 (landscaping proposed)

See attached Appendix S3.1



Credit is not feasible and will not be pursued

Option 1: For projects located in urban areas that earn S1.4 (Development Density and Community Connectivity), pedestrian - oriented hardscape areas (i.e., accessible play yards, athletic fields, plazas, courtyards) can contribute to credit compliance if a minimum of 25% of the open space counted is vegetated.

50,020sq ft. - 26,116 sq ft = 23,904 sq ft open space X .25 = 5,976 sq. ft. Required, o sq ft. is provided.

See attached Appendix S3.1

S 4.1 Stormwater Design, Quality Control

This credit is not feasible since we are connecting to a combined sewer and there are no requirements for filtration of storm water.

Heat Island Effect

S 5.1R Heat Island Effect, Roof

This Credit will be complied with by the use of white pre-cast concrete roofing pavers over more than 75% of the roof surface. The roofing pavers will have a Solar Reflectance Index (SRI) of 78 minimum when tested in accordance with ASTM E1980 and as per SCA DR 4.4.1.1 and Standard Specification Section 07560.

S 6.1 Light Pollution Reduction

The project will minimize light trespass from the building and site and reduce the development impact on the local nocturnal environment. The project will comply with the credit requirements for interior and exterior lighting. The exterior lighting will be provided at the following locations:

- · All entrances, exits and walkways including exit discharge
- Building perimeter

Illuminate areas only as required for safety and comfort. Lighting Power Densities shall not exceed ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda) for the classified zone. Meet exterior lighting control requirements from ASHRAE/IESNA Standard 90.1-2010, Section 9, table 9.4.5, Exterior Lighting Section, without amendments (with errata but without addenda).

This project is in an LZ2 Zone as per 1RCNY5000-01 of the New York City Energy Code (all R districts, R districts with C overlays and MX districts). The exterior lighting requirement of the credit will be met by **designing** exterior lighting so that all site and building mounted luminaries produce a maximum initial illuminance value no greater than 0.10 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 10 feet beyond the site boundary. Document that no more than 2% of the total initial designed fixture lumens (sum total of all fixtures on site) are emitted at an angle of 90 degrees or higher from nadir (straight down).

Light pollution reduction design approach toward meeting this credit include:

Luminaires will be high efficiency LED.

All interior lighting shall automatically be controlled by a programmable Lighting Control Panel with integral clock except for the emergency lighting. The Lighting Control Panel shall be provided at the Electric Closet and to control all spaces that do not have automatic shutoff and/or Occupant sensors. This will meet this credit's requirement for control of interior lighting with direct line of site to the exterior.

Instructional space: For spaces 2,000 SF or less in area, lighting shall be controlled by one ceiling mounted vacancy sensor which will meet this credit's requirement for control of interior lighting with direct line of site to the exterior.

Exterior/site/security lighting will be provided around the perimeter of the school for safe passage of students and staff and to deter theft and vandalism.

Main Entrances and Walkways: 5.0 foot-candle (average). This many times is at odds with the credit requirements for maximum lighting at site boundary, but student safety and security will take precedence although every effort will be made to still earn this credit.

Building Perimeter: 1.0 foot-candle (average) to a 20-foot depth. This many times is at odds with the credit requirements for maximum lighting at site boundary, but student safety and security will take precedence although every effort will be made to still earn this credit.

Lighting levels will be achieved utilizing the LED Philips Stonco #LP16-T.

All fixtures will be suitable for exterior use with a hinged and gasketed diffuser/door.

Diffusers will be mechanically affixed to the doorframe.

Lighting Control: All site security lighting will be master controlled by the programmable lighting controller.

Applicable SCA Design Requirements include:

7.2.1 Interior Lighting

7.2.3 Emergency Lighting7.2.5 Exterior / Site / Security Lighting

Applicable SCA Standard Specifications Include:

16145 Lighting Control
16502 LED Interior Building Lighting
16520 Exit Sign Lights and Emergency Lighting Fixtures and Systems
16530 LED Site/Security Lighting

Project meets the requirements for this credit

Water Credits

Outdoor Systems

W 1.1 Water Efficient Landscaping, Reduce by 50%

This credit is not feasible since we are not providing any landscaping.

W 1.2 Water Efficient Landscaping, No Potable Water Use or Irrigation

This credit is not feasible since we are not providing any landscaping.

Indoor Systems

W 2.1P Minimum Water Use Reduction

See narrative below

W 2.2 Enhanced Water Use Reduction, 30% Reduction

Compliance with this credit will be achieved by the implementation of all New York City SCA Standard Specifications and Plumbing Design Requirements for low flow toilets, low flow urinals, low water flow shower heads, and aerated metered faucets

For W2.1R, W2.2R and W2.3R: The SCA Design Standards are:

- -DR 6.1.16 Compliance with LL86/05
- -SS 11400 Food Service Equipment (pre-rinse spray valve flow rate).
- -SS15440 Plumbing Fixtures

The completed Water Use Reduction Certification Form will be included in the 60% Construction Document Submission.

W 2.3 Enhanced Water Use Reduction, 35% Reduction

This is a High School with only a few urinals. Therefore, this credit is not feasible.

W 2.4 Enhanced Water Use Reduction, 40% Reduction

This is a High School with only a few urinals. Therefore, this credit is not feasible.

Commissioning

E 1.1P Fundamental Commissioning

SCA Standard requires all new capacity projects to undergo whole building commissioning which exceeds LEED requirements for commissioning. The Commissioning Agent for this project will be a Consultant (Noresco) retained by the SCA.

Commissioning process activities shall be completed for the following energy-related systems, at a minimum:

- Heating, ventilating, air conditioning, and refrigeration (HVAC&R) systems (mechanical and passive) and associated controls
- Lighting and daylighting controls
- Domestic hot water systems
- Emergency Generator

For E1.1P: The SCA Design Standards are:

- SSS01352 Sustainability
- SSS01650 Facility Start-up, Demonstration and Training
- SSS01660 Supplemental Commissioning Requirements

Project meets the requirements for this credit

E 2.1P Fundamental Refrigerant Management

No CFC-based refrigerants will be used in the HVAC or refrigerant systems of this project. This project design complies with the requirements of this credit. This credit will be achieved through the description below.

The central air conditioning system for the school will consist of rooftop units that utilize refrigerant R-407C or R-410A, split air cooled chiller and split heat pump units that utilize refrigerant R-410A.

For E2.1P: The SCA Design Standards are:

- SS11400 Food Service Equipment
- SS15650 Split Air Cooled Chillers
- SS15660 Packaged Modular Outdoor Chillers
- SS15783 Split Heat Pump System
- SS15932 Active Chilled Beams
- SS 15937 Displacement Induction Units
- SS15933 DOAS Units
- SS15935 Single Zone Variable Air Volume (SZVAV) Air Handling

Project meets the requirements for this credit

E 2.2 Enhanced Réfrigérant Management

Based on the SCA standard equipment specified for this project, this credit is not feasible.

A calculation will be provided at 60% for verification.

The requirements of this credit will be achieved through compliance with SCA Design Requirement 6.2.20 Building Management Control System/Direct Digital Control BMS/DDC.

The SCA controls design will incorporate sensors, sub-meters, watt-meters and instrumentation, as well as a Building Management System that will provide the energy information. The Building Management Control System (BMS) for the new building will measure/monitor gas consumption by the hot water boilers, rooftop HVAC units, new kitchen gas consumption and individual electrical power consumption by rooftop HVAC units, condensing units and lighting panels, and other such items per standard SCA design.

The applicable SCA standards are:

SCA Design Requirements
6.2.20 Building Management Control System/Direct Digital Control BMS/DDC

SCA Standard Specifications
15416 Gas Piping Systems
15970 Temperature Control System (LonWorks BMS/DDC with School Operating Console)
15973 Facility Management Systems Integration
15985 Sequence of Operations

SCA Standard Details

15985 HVAC Standard Detail Series

other references

Project meets the requirement for this credit

E 3.2R Energy Management System Controls, HVAC and Hot Water

The requirements of this credit will be achieved through compliance with SCA Design Requirement 6.2.20 Building Management Control System/Direct Digital Control BMS/DDC.

The new building will be provided with Building Management System (BMS) that will be connected to the NYCDOE Wide Area Intranet Network (WAN). This connection allows complete monitoring and control of the school's MEP systems from both the local BMS station in the Custodian's office as well as the DOE central monitoring and control station located at 44-46 Vernon Blvd., Long Island City, NY.

The applicable Standard Specifications are:

SCA Design Requirements

6.2.20 Building Management Control System / Direct Digital Control BMS/DDC

SCA Standard Specifications

15970 Temperature Control System (LonWorks BMS/DDC With School Operating Console)

15973 Facility Management Systems Integration

15985 Sequence of Operations

SCA Standard Details
15985 HVAC Standard Detail Series

Project meets the requirement for this credit

Energy Efficiency

E 4.1P Minimum Energy Performance

This project complies with this credit by complying with SCA standard design requirements and specifications and will be confirmed by a project specific energy model.

The project specific model will comply with Local Law 86/05 and must demonstrate a minimum of 20% regulated energy cost reduction over the minimum requirements of the governing New York State Energy Conservation Construction Code (ECCC) at the beginning of design. Whole Building Energy Simulation will Demonstrate a 6% improvement for the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda, as permitted by LEED Interpretation ID #10421) by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. The model will analyze the building envelope, HVAC systems, elevator loads and lighting.

Compliance with this credit will be achieved as follows:

Architectural:

Building Envelope:

Glazing Solar Heat Gain Coefficient (SHGC) fenestration = 0.38 max; U center of glass= 0.30 max; U window composite with frame = 0.45 max

3" of rigid insulation (R-15) in the exterior wall cavity space between brick and block withes. 4" brick, 3" rigid insulation, 6" CMU, air space, 5/8" Gyp Bd U<.0.057

Roof insulation minimum R-30; U=0.032

Mechanical (HVAC):

Primary Equipment

Heating System: Central gas-fired condensing boilers with 94.5% thermal efficiency; located in Boiler Room serving variable air volume air handling units on roofs and HW finned tube radiators in classrooms; separate hot water pumps will provide perimeter hot water to the fin tube radiators via a plate and frame heat exchanger.

Cooling System; Chilled water will provide cooling for the AHUs. Chiller will consist of an outdoor modular air cooled system that is in compliance with NYC SCA Specification 15660; the chilled water will have a 30% glycol solution for freeze protection and will operate on 42°F supply chilled water temperature.

<u>Classroom Systems Terminal Heating System:</u> Standard Hot water fin tube perimeter radiation heating.

<u>Classroom Systems Terminal Cooling System:</u> Non-fan_powered VAV boxes for cooling for classrooms and offices. Fan powered VAV boxes with electric re-heat for labs.

<u>Public Assembly Spaces</u>: Single Zone VAV air handling units with 30% Glycol hot water coils and chilled water coils.

Electrical:

Average Lighting Power Density: Target is less than 0.7 W/sf using LED lighting throughout.

Lighting Controls: Lighting control as per SCA DR 7.2.1.

Office Equipment: Energy Star equipment; to be coordinated by SCA/DIIT.

Computers: LCD screens; to be coordinated by SCA/DIIT.

Occupancy Sensors: In classrooms, offices and Gym.

Plumbing:

Water Pumps: VFD on water Pumps

Hot Water Heater: service Hot Water heater with min. 82% efficiency and modulating flame controls.

For E4.1P: The SCA Design Standards are:

- DR1.1.5.2 Building Areas Energy Saving and Non-Energy Saving Spaces Fenestration
- DR1.3.1.10 Prototypical Energy Modeling (Capacity & CIP) / Green Building Multi-Discipline Design Parameters.
- DR4.2.1 Exterior Masonry Wall
- DR6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
- DR6.2.3 Non-Assembly Spaces
- DR6.2.4 Public Assembly Spaces
- DR6.2.9 Heating and Cooling Design parameters (Load Calculations)
- DR6.2.20 Building Management Control System/DOC Control BMS
- DR6.2.28 HVAC Design Requirements for Special Spaces
- DR6.2.34 Verification of Air System Design
- DR7.2.1 Interior Lighting
- DR 7.2.5 Exterior Lighting

Applicable SCA Standard Specifications:

- SS08524 Aluminum Windows Projected
- SS15540 HVAC Pumps
- SS15565 Condensing Boilers
- SS15783 Packaged Heat Pump System
- SS15853 Custom Packaged Rooftop Heating and Cooling Units (VAV)
- SS15852 Fan Coil Units
- SS15930 Variable Air Terminals
- SS15970 Temperature Control System
- SS15973 Facility Management Systems Integration
- SS15985 Sequence of Operations
- SS16145 Lighting Control Devices
- SS16502 LED Interior Building Lighting
- SS16530 Site/Security Lighting

Applicable SCA Standard Details:

- SD04200 Unit Masonry
- SD15970 BMS Control Diagrams

Other references:

ASHRAE/IESNA Standard 90.1-2010
Energy Conservation Construction Code of New York State
Local Law 86/05
Energy Star Statement of Energy Design Intent (SEDI)

HVAC Optimization

E 4.2R HVAC System Sizing, Avoid Oversizing

This project complies with this credit by the following:

The new HVAC Systems for the new building will be sized per NYCSCA DR 6.2.13 "Arrangement and Sizing of Equipment" and 6.2.9 "Heating and Cooling Design" (Load calculations) and will not be oversized. Ventilation calculations will be based on New York City Building Code.

Documentation demonstrating that cooling load calculations were performed for the maximum dry-bulb conditions will be submitted at 60%.

The project team has designed the HVAC system to not only efficiently handle peak and design load conditions, but to operate efficiently during a wide range of partial load conditions, which are the most common operating conditions.

The heating loads and cooling loads shall be calculated as per Design Requirement 6.2.13 as follows: Heating Capacity:

All boilers (condensing) shall be provided with a reserve capacity equal to that as defined in the Engineering

Criteria for Fuel Oil Burning Equipment of the NYC Department of Environmental Protection Bureau of Air Resources, July, 1973 and SCA Standards. Reserve capacity shall be 25% to account for piping losses and pickup. Boiler capacity shall be based on total connected capacity.

Cooling Capacity:

The cooling capacity for roof top units shall be increased by 10% to account for duct losses (duct insulation losses, duct air leakage) and general building pull-down. The 10% term (i.e. 1.10 multiplier) shall be applied to all terms (transmission, infiltration, lighting loads, equipment loads, people loads, and solar loads). Cooling loads shall include the sensible loads and the latent dehumidification loads (as per Design Requirements 6.2.3 and 6.2.4).

For E4.2R: The SCA Design Standards are:

- DR6.2.9 Heating and Cooling Design Parameters (Load Calculations)
- DR6.2.13 Arrangement and Sizing of Equipment
- DR 6.2.34 Verification of Air System Design
- SS15540 HVAC Pumps
- SS15565 Condensing Boilers
- SS15783 Split Heat Pump System
- SS15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

Project meets the requirement for this credit

Power

E 5.1R Green Power

The City of New York purchases wind credits that support the production of approximately 29,000 MWH a year. The City has arranged with the U.S. Green Buildings Council (USGBC) to utilize this purchase in order to qualify for green power credits that contribute to the achievement of a LEED® rating on city projects.

The 100% construction documents will include calculation of annual Green Power Allocation Request (NYC LL86/05 LEED Reporting Form using lines 39-40-41).

Project meets the requirement for this credit

Materials Credits

Efficient Material Use

M 1.1P Storage & Collection of Recyclables

Compliance with this credit will be accomplished by (1) providing an easily accessible dedicated area to the collection and storage of non-hazardous materials for recycling for the entire building. Materials will include at a minimum paper, corrugated cardboard, glass, plastics and metal. A space will be provided in, or adjacent to, this recycling area, for the storage of utility carts used for collecting trash and recyclables. Equipment for storing and processing recyclables is provided by the SCA/F&E Unit based on a standard list of items per project type.

(2) Sizing central recycling collection/storage will be in accordance with the guidelines in the Design Requirement DR 1.3.1.8 Refuse and Recycling Storage, which are consistent with LEED for Schools 2009 space guidelines. Allow space for bailers and compactor in the Trash Room.

(3) At the cafeteria, a designated area(s) for bin(s) for recycling will be provided. Since the NYC Department of Sanitation sorts glass, plastic, metal, and milk and juice boxes off-site, only one type of recycling container needs to be provided at cafeterias. The amount of space for recycling containers is established by the Design Team based on criteria in DR 1.3.1.8.

Wall-mounted sign holder(s) will be provided at cafeteria trash and recycling areas for the display of recycling instructional posters.

(4) Within the kitchen area, space will be provided for two types of recycling containers to accommodate glass/plastic/metal and paper/cardboard.

For M1.1P: The SCA Design Standards are:

- DR 1.3.1.2 Building Organization Space Relationships
- DR 1.3.1.8 Refuse and Recycling Storage
- DR 1.3.5.01 Cafeterias PK-5
- SS1172 Waste Handling Equipment

M 1.2 Building Reuse, Maintain 75% of Existing Walls, Floors & Roof

The credit is not feasible for this project because there is no building on site where the new building is to be constructed. This area of the site is vacant.

M 1.3 Building Reuse, Maintain 95% of Existing Walls, Floors & Roof

The credit is not feasible for this project because there is no building on site where the new building is to be constructed. This area of the site is vacant.

M 1.4 Building Reuse, Maintain 50% of Interior Non-Structural Elements

The credit is not feasible for this project because there is no building on site where the new building is to be constructed. This area of the site is vacant.

M 1.5R Construction Waste Management, Divert 50% from Disposal

Credit is feasible. See narrative below.

M 1.6R Construction Waste Management, Divert 75% from Disposal

Credit is feasible. See narrative below

M 1.7 Construction Waste Management, Divert 95% from Disposal

This credit will be achieved by requiring the contractor to develop a construction waste management plan and to record the amount and type of construction waste diverted/recycled. The contractor will be required to comply with the following SCA Standard Specification sections in the Contract documents:

S01352 Sustainability

S01524 Construction Waste Management

Sustainable Materials

M 2.1R Recycled Content, 10% (post-consumer + ½ pre-consumer)

Credit is feasible. See narrative below

M 2.2 Recycled Content, 20% (post-consumer + ½ pre-consumer)

Credit is feasible and will be pursued

This credit will be achieved by using materials with recycling content such that the sum of post-consumer content plus one-half of pre-consumer recycling content constitutes at least 20% of the total value of the materials in the project. The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value. Recycled contents shall be defined in accordance with the International Organization for Standardization document, ISO

labeling). Per the methodology for this credit in the current version of LEED, the typical value of materials on the project will be assumed to be 45% of the cost of Divisions 2-10. The contractor will be required to comply with the following SCA Standard Specification sections in the Contract documents:

- 02200 Earthwork
- 02511 Asphaltic Concrete Paving
- 02513 Sidewalk and Street Paving
- 03300 Cast-in-Place Concrete
- 04200 Unit Masonry
- 05120 Structural Steel
- 05710 Steel Stairs
- 07211 Perimeter Foundation Building Insulation
- 07212 Miscellaneous Building Insulation
- 07250 Sprayed Fire Resistive Materials
- 07560 Fluid-applied Protected Membrane Roofing
- 08524 Aluminum Projected Windows
- 09260 Gypsum Board Assemblies
- 09310 Ceramic Tile
- 09510 Acoustic Ceilings
- 09650 Resilient Floorings
- 09680 Carpets
- 10151 Toilet Compartments

M 2.3 Regional Materials, 10% Extracted, Processed & Manufactured Regionally

Credit is feasible. See narrative below

M 2.4 Regional Materials, 20% Extracted, Processed & Manufactured Regionally

This credit will be achieved by using building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% the total material value. Per the methodology of this credit in the current version of LEED, the typical value of materials on the project can be assumed to be 45% of the cost of Divisions 2-10. The contractor will be required to comply with the following SCA Standard Specification sections in the Contract documents:

- 02200 Earthwork
- 02511 Asphaltic Concrete Paving
- 02513 Sidewalk and Street Paving
- 02900 Landscaping
- 03300 Cast-in-Place Concrete
- 04200 Unit Masonry
- 05120 Structural Steel
- 05300 Metal Deck
- 09260 Gypsum Board Assemblies
- 09310 Ceramic Tile

Credit is feasible and will be pursued

This credit will be achieved by using building materials for the exterior envelope construction that are resistant to mold. The contractor will be required to comply with the following SCA Standard Specification sections in the Contract documents:

- 06100 Rough Carpentry
- 07212 Miscellaneous Building Insulation
- 07250 Sprayed Fire-Resistive Materials
- 09260 Gypsum Board Assemblies

Indoor Environmental Quality Credits

IAQ Post-occupancy

Q 1.1P Minimum IAQ Performance & Increased Ventilation

The IEH Consultant, TRC,) outdoor air analysis report concluded the following:

"TRC's outdoor air assessment of Q575 located at 28-01 41st Avenue, Queens, New York revealed no significant sources of air contaminants in the vicinity of the Site, with the exception of the USEPA listing of Queens County as a "non-attainment" area for ozone (8-hour) with respect to the Primary NAAQS. TRC recommends that the findings of this assessment be provided to the design team for their consideration."

The ventilation system for the new building will be designed to meet NYC Building Code.

For Q1.1P: The SCA Design Standards are:

- DR6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
- DR6.2.1 HVAC Unit Centralization and Coordination
- DR6.2.3 Non-Assembly Spaces (Classrooms, Offices, etc.)
- DR6.2.4 Public Assembly Spaces
- DR6.2.9 Heating and Cooling Design Parameters (Load Calculations)
- DR6.2.20 Building Management System/DDC BMS and DDC only Systems
- SSS01550 Indoor Air Quality Requirements
- SSS01550 Indoor Air Quality Requirements
- SS15852 Fan Coil Units
- SS15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)
- SS15985 Sequence of Operations
- SS15992 Cleaning and Testing
- SS15993 Balancing of Systems

Appendix

Q1.1P A TRC Letter Dated 1/04/17



1430 Broadway 10th Floor New York, NY 10018

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January 4, 2017

Ms. Lee Guterman
Director of Hazmat, IEH Division
New York City School Construction Authority
30-30 Thomson Avenue
Long Island City, NY 11101-3045

Re: ASHRAE Outdoor Air Assessment

Q575 28-01 41st Avenue Queens, New York 11101 SCA Project ID 104408; Service ID 64846 TRC Project No. 264669.0000.0000

Dear Ms. Guterman,

At the request of the New York City School Construction Authority (NYCSCA), TRC Engineers, Inc. (TRC) conducted an outdoor air assessment for Q575 located at 28-01 41st Avenue, Queens, New York 11101 (the "Site"). The assessment was conducted in accordance with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 62.1-2016 Section 4.0: Outdoor Air Quality. The assessment is required to satisfy the New York City Department of Education/NYCSCA Green Schools Guide Credit Q1.1 R Minimum IAQ Performance/Increased Ventilation, and consisted of a qualitative evaluation of regional and local air quality.

A. Regional Air Quality Compliance Status

Criteria air pollutants are those substances for which a National Ambient Air Quality Standard (NAAQS) has been established as provided for in the Clean Air Act or listed in Table 4-1 of the 2007 ASHRAE Standard (i.e., sulfur dioxide, particulate matter [PM-10 and PM-2.5], carbon monoxide [1 hour and 8 hour], oxidants [ozone 1 hour and ozone 8 hour], nitrogen dioxide, and lead). According to the United States Environmental Protection Agency (USEPA), Queens County is listed as a "non-attainment" area for ozone (8-hour).

B. Local Survey

Date and Time of Observations
A Site survey was performed on December 22, 2016 at 11:15 A.M. by Emily Ebert of TRC.

Area Surveyed

The Site consists of an approximately 47,000 square foot (sf) asphalt-paved lot improved with a playground and parking area that is associated with a four-story school building adjoining the Site to the south. The Site survey was conducted by walking the exterior of the Site and adjacent

January 4, 2017 Ms. Lee Guterman Outdoor Air Assessment Q575 28-01 41st Avenue Queens, New York 11101 Page 2 of 3

properties. The weather conditions on December 22, 2016 at 11:15 A.M. were approximately 45°F and cloudy. No limiting conditions were encountered during the Site survey.

Description of Nearby Facilities

The Site is bounded to the north and northeast by 40th Avenue followed by an industrial building, a church with a rectory, and a religious facility; to the east and southeast by 29th Street followed by residential/commercial buildings, a hotel, a church, and a Metropolitan Transportation Authority (MTA) facility under construction; to the south and southwest by a four-story public school facility (P.S. 450Q) followed by 41st Avenue; and, to the west and northwest by 28th Street followed by residential and commercial buildings and a vacant lot. On 29th Street to the southwest of the Site is the MTA New York City Transit 29th Street Ventilation Building.

Observations of Odors or Irritants

There were no odors or irritants noted during the Site survey.

Description of Visible Plumes or Air Contaminants

There were no visible plumes or air contaminants observed during the Site survey.

Description of Nearby Sources of Vehicle Exhaust

The Site is located in a mixed-use area with low to moderate vehicular traffic. Additionally, as discussed above, the 29th Street Ventilation building is located south of the Site. Emissions from this structure would not be expected to affect the Site since the Ventilation building is located approximately 650 feet southwest of the Site.

Direction of Prevailing Winds

The direction of prevailing wind was determined through a review of the National Climatic Data Center's (NCDC) summary of "Climatic Wind Data for the United States (November 1998)." The nearest NCDC data collection point is in New York County at Central Park (approximately 2.5 miles west of the Site). The NCDC data indicates that the prevailing wind direction in New York County (measured at Central Park) is from the northwest in December through April, from the southwest in May through September, and from the west in October and November. The wind direction at the time of the Site inspection was from the west.

TRC's outdoor air assessment of Q575 located at 28-01 41st Avenue, Queens, New York revealed no significant sources of air contaminants in the vicinity of the Site, with the exception of the USEPA listing of Queens County as a "non-attainment" area for ozone (8-hour) with respect to the Primary NAAQS. TRC recommends that the findings of this assessment be provided to the design team for their consideration.



January 4, 2017 Ms. Lee Guterman Outdoor Air Assessment Q575 28-01 41st Avenue Queens, New York 11101 Page 3 of 3

Please contact me at (203) 278-5305 if you have any questions or comments.

Sincerely,

TRC Engineers, Inc.

Ludsay O'Hara

Lindsay O'Hara Project Manager

cc:

Mike Wagner – NYCSCA



Credit is feasible and will be pursued

The requirements of this credit will be achieved through compliance with SCA Design Requirements:

DR 6.2.0 General Overview of HVAC Systems

DR 6.2.1 HVAC Unit Centralization and Coordination

DR 6.2.3 Non-Assembly Spaces (Classrooms, Offices, etc.)

DR 6.2.9 Heating and Cooling Design Parameters (Load Calculations)

DR6.2.20 Building Management System/DDC BMS and DDC only Systems

The new central ventilation system (rooftop HVAC units) for the new building will be provided with air flow measuring stations at the outside air intakes in order to measure/monitor the outside air supplied to the school. Data for outside air measurement will be available for verification at the school level through the BMS system schools operating console in the Custodian's office or through the DOE centralized host control station for Automatic Temperature Control of Schools in NYC. The monitoring equipment will be configured to generate an alarm when the conditions (either airflow value or CO2 level) vary by 10% or more from the value expected at design conditions, via the building automation system alarm to the building operator. Monitoring will be in accordance with the following:

FOR MECHANICALLY VENTILATED SPACES

- Monitor carbon dioxide concentrations within all public assembly spaces. For densely occupied non-assembly spaces (those with a design occupant density greater than or equal to 25 people per 1000 sq.ft.) served by a common Central Variable Air Volume System, monitor total outside ventilation airflow (monitor for carbon dioxide concentrations for all densely occupied non-assembly spaces provided with a decoupled or dedicated ventilation systems. CO2 monitoring locations shall be between 3 feet and 6 feet above the floor).
- Provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor air intake flow with an accuracy of plus or minus 15% of the design minimum outdoor air rate, as defined by ASHRAE 62.1-2010 for mechanical ventilation systems where 20% or more of the design supply airflow serves non-densely occupied spaces.

Applicable specification sections to be included:

- 15970 Temperature Control System (LonWorks BMS/DDC with School Operating Console)
- 15985 Sequence of operations

Credit is feasible and will be pursued (30% Submission)

The project specifications will require that the project contractor to develop an IAQ Construction Management Plan to be implemented during construction. The Plan will include requirements to meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3). All absorptive materials that are stored on site or installed will be protected from moisture damage. A dust control plan will be developed and implemented. Whenever permanently installed air handlers are used, filtration media with a Minimum Efficiency Reporting Value (MERV) 8, as determined by ASHRAE 52.2-1999, will be used at each return air inlet. All filtration media will be replaced prior to occupancy. In addition, smoking will be prohibited inside the building and within 25' of building entrances. The Plan will also require that any materials that emit Volatile Organic Compounds (VOCs) or urea formaldehyde and do not comply with the low emissions criteria, as outlined in credits Q3.1R through Q3.4R, will be mechanically exhausted during installation and will continue to be ventilated for at least 72 hours after installation until emissions dissipate. Prior to substantial completion, all carpeted and soft surfaces will be vacuumed with a high-efficiency particulate arrestor (HEPA) vacuum. The Plan will also contain the following minimum requirements to be implemented during construction:

- Building materials, such as wood, porous insulation, paper, and fabric, will be kept dry to prevent the growth of mold or bacteria.
- Deliveries will be scheduled so that materials that are susceptible to mold growth are installed after the construction area is water tight.
- In the event that materials do experience water damage, they will begin being dried within 24 hours. If they are damp or wet for more than 48 hours, they may need to be discarded as determined by the SCA.
- Any materials showing signs of mold and/or mildew will be removed from the site and properly disposed
 of. The damaged materials will be replaced with new, undamaged materials.

In addition to all these requirements, the sequence of installation will be coordinated to install high VOC-emitting products prior to the installation of porous or fibrous materials (i.e. carpet). In the event that this is not possible, porous materials will be protected with polyethylene vapor retarders. In addition, all carpeting will be installed after the spaces have been painted. With these efforts, the indoor air quality problems that typically result from the construction process will be minimized and the comfort and well-being of both the construction workers and building occupants will be sustained.

Applicable SCA Standard Specifications Include:

G01700 Project Closeout S01550 Indoor Air Quality Requirements S01560 Installation Sequence of Finish Materials

Q 2.2R Construction IAQ Management Plan, Before Occupancy

Credit is feasible and will be pursued

Design documents will require the Contractor to follow one of the following alternates for flushing out the building at completion of construction:

After construction ends, but prior to occupancy and with all interior finishes installed, contractor is to install new filtration media and perform a building full flush-out. Supply the total air volume of 14,000 cubic foot of outdoor

air per square foot of floor area prior to occupancy maintaining an internal temperature at least 60°F dry bulb and relative humidity no higher than 60%.

If there is not enough time for full flush-out in the construction schedule, the space may be occupied following delivery of a minimum of 3,500 cubic foot of outdoor air per square foot of floor area to the space. Once the school is occupied, it shall be ventilated at a rate of 0.30 cubic feet per minute per square foot of outside air or the design minimum outside air rate, whichever is greatest. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy and shall continue until a total of 14,000 cubic foot of outside air per square foot of floor area has been delivered to the space. After complying with this requirement, all ventilation systems will operate in normal mode.

The following SCA Standard Specification section will be incorporated in Contract Documents:

- G01700 Project Closeout
 - S01352 Sustainability
- S01550 Indoor Air Quality Requirements

Low-Emitting Materials

Q 3.1R Low-Emitting Materials, Adhesives & Sealants

Credit is feasible and will be pursued

All adhesives and sealants specified in this project will comply with VOC limits established by New York State as well as by rule # 1168 of the South Coast Air Quality Management District (SCAQMD) and the Green Seal Standard for commercial adhesives GS-36 requirements, as listed in the SCA Standard Specification Section G01600 Materials and Equipment.

The following SCA Standard Specification Sections will be incorporated in the Contract Documents:

S01352 Sustainability

G01600 Material and Equipment

06100 Rough Carpentry

06200 Finish Carpentry

06410 Custom Casework

07270 Firestopping / Smoke Seals

07900 Joint Sealers

08210 Wood Doors

08524 Aluminum Projected Windows

08800 Miscellaneous Glazing

08920 Aluminum Framed Entrances and Storefronts

09260 Gypsum Board Assemblies

09310 Ceramic Tile

09415 Terrazzo Tile (Reference to low V.O.C. requirements as stated in specification section G01600

have been added to document dated 11Nov2016.)

09510 Acoustical Ceilings

09626 Resilient Athletic Flooring

09650 Resilient Flooring

Credit is feasible and will be pursued

All paints and coatings specified in this project will comply with VOC limits established by New York State and the by rule # 1113 of the South Coast Air Quality Management District (SCAQMD) and the Green Seal Standard for GS-11, GS-03 as listed in SCA Standard Specification Section G01600 Materials and Equipment and 0900 Painting Requirements for compliance documentation are found throughout the SCA Standard Specifications.

The following SCA Standard Specification Sections will be incorporated in the Contract Documents:

S01352 Sustainability
G01600 Material and Equipment
09626 Resilient Athletic Flooring
09590 Wood Flooring
09900 Painting
Div 15 - All HVAC and P&D paints and coatings

Q 3.3R Low-Emitting Materials, Flooring Systems

Credit is feasible and will be pursued

All of the hard surface flooring must be certified as compliant with the FloorScore standard (current as of the date of this Rating System, or more stringent version) by an independent third-party. Flooring products covered by FloorScore include vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, wall base, and associated sundries.

The following SCA Standard Specification Sections will be incorporated in the Contract Documents:

S01352 Sustainability
G01600 Material and Equipment
09310 Ceramic Tile
09415 Terrazzo (Reference to low V.O.C. requirements as stated in specification section G01600 have been added to document dated 11Nov2016.)
09590 Wood Flooring
09650 Resilient Flooring

Q 3.4R Low-Emitting Materials, Comp Wood & Agrifiber Products

Credit is feasible and will be pursued

Compliance will be achieved by using composite wood and agrifiber products used on the interior of the building that contain no added urea-formaldehyde resins.

For Q3.4R: The SCA Design Standards are:

- S01352 Sustainability
- SS06100 Rough Carpentry
- SS06200 Finish Carpentry
- SS06410 Custom Casework
- SS08210 Wood Doors
- SS09590 Wood Flooring
- SS10100 Visual Display Boards

- SS12761 Wood Bleachers
- SS10415 Bulletin Boards, Display Boards, Display Cabinets and Cases
- SS10653 Manual operated Folding Panel Partitions
- SS12302 Manufactured Wood Casework
- SD06200 Finish Carpentry
- SD06410 Custom Casework

Pollution Source Control

Q 4.1R Indoor Chemical & Pollutant Source Control

Credit is feasible and will be pursued

This project will comply with the requirement of this credit by designing according to following design requirements:

- 1.3.4.1 Entrance and Exits
- 6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems
- 6.2.28 HVAC Design Requirement for special spaces

An entryway foot grille will be provided per Specification Section 12485 at the new main entrances (front and back).

A storage room for garbage is provided. Janitor's sink closets, Grounds Equipment rooms, General Storage Rooms, and copy rooms will be sufficiently exhausted to create negative air balance with respect to adjacent spaces and will be designed with self-closing doors.

The occupied areas will be provided with air filtration media that provides a Minimum Efficiency Reporting Value (MERV) of 13 or better. Filtration will be applied to both return and outside air that is to be delivered as supply air.

The following SCA Standard Specification Sections will be incorporated in the Contract Documents:

- 12485 Foot Grilles
- SS15540 HVAC Pumps
- SS15565 Condensing Boilers
- SS15783 Split Heat Pump System
- SS157852 Fan Coil Units
- SS15853 Custom Packaged Rooftop Heating and Cooling Units (Variable Air Volume System)

Q 4.2R Electric Ignition Stoves

The convection oven and skillet will be specified with electronic spark ignition. The range will be supplied with a safety type pilot which shuts off the main gas supply in the event of accidental pilot outage.

Q 4.3R Post Construction Indoor Air Quality

High Efficiency Particulate Arrestor (HEPA) vacuums – two (2) shall be provided through the SCA F&E Unit as part of the initial equipment for the school.

Controllability of Systems

Q 5.1R Controllability of Systems, Lighting

Controllability will be provided as follows:

Administrative Offices and Other Regularly Occupied Spaces

Provide individual lighting controls for 90% (minimum) of the building occupants to enable adjustments to suit individual task needs and preferences

AND

Provide lighting system controls for all learning spaces including classrooms, chemistry laboratories, art rooms, shops, music rooms, gymnasiums and dance and exercise studios to enable adjustments that meet group needs and preferences.

All interior lighting shall automatically be controlled by a programmable Lighting Control Panel with integral clock except for the emergency lighting. The Lighting Control Panel shall be provided at the Electric Closet and to control all spaces that do not have automatic shutoff and/or Occupant sensors.

The requirements for compliance with this credit will be as follows:

In classrooms and all spaces with windows, provide vacancy sensors and daylight harvesting. Provide manual override of daylight sensors with switches for three lighting levels (on, off, and midlevel) to allow occupant adjustments in classrooms and group spaces. Midlevel lighting should be 30% to 70% of the maximum illumination level.

In Spaces without windows: wall mounted vacancy sensor to automatically control lighting with an override switch.

Cafeteria/Lunch Room: key operated switches, occupancy sensors.

Gymnasium: key operated switches, vacancy sensors.

Corridor: emergency lighting controlled from key operated switches located at the main entrance; other lights controlled by control panel on each floor and occupancy sensors.

Electrical Closet: toggle switch.

Library: one (3) low-voltage switch located in the librarian office.

Individual office: wall mounted vacancy sensor to automatically control lighting with an override switch.

Janitor's Closet: wall-mounted vacancy sensor.

Mechanical Areas – Service Areas: toggle switch.

Staff toilets: vacancy sensor.

Stair: emergency lighting controlled from key operated switches located at the main entrance; other lights controlled by control panel, 2 occupancy sensors.

Storage: vacancy sensor.

Student toilets: key-operated switch.

Applicable SCA design requirements 7.2.1 Interior Lighting

Applicable SCA standard specifications

16140 Wiring Devices 16145 Lighting Control Devices

Applicable SCA Standard Details include: SCA Room Planning Standards (Standard Room Layouts)

Q 5.2R Controllability of Systems, Thermal Comfort

This credit will be achieved by following SCA standards for thermal comfort controls by providing controllability at shared group multi-occupancy spaces (i.e., instructional rooms, cafeterias, gyms, libraries) and in select office areas.

sca design requirements

6.2.0 General Overview of Heating Ventilation and Air Conditioning Systems

6.2.1 HVAC Unit Centralization and Coordination

6.2.3 Non-Assembly Spaces (Classrooms, Offices, etc.)

6.2.4 Public Assembly Spaces

sca standard specifications 15970 Temperature Control System 15985 Sequence of Operations

Thermal Comfort

Q 6.1R Thermal Comfort, Design

This project will comply with the requirements of this credit by designing according to ASHRAE 55-2004 including showing the following:

Design parameters in HVAC drawings.

• System capacities necessary to attain the design indoor conditions capacities to be indicated on equipment schedules.

• Floor plan layouts indicating locations of air outlets (i.e., diffusers, registers), terminal units (i.e,. VAV boxes), and air capacities (CFMs)

- Floor plans coordinating location of air outlets, terminal units and control devices with architectural layouts
- Floor plans indicating control devices and the terminal unit being controlled, and specifications indicating performance adjustments criteria for control devices.
- HVAC drawings showing control network architecture and control diagrams for every typical system.
- In the specifications, incorporate requirements for the Contractor to provide the owner with maintenance and operating manuals.
- Control specifications indicating specific limits in the adjustment of manual controls.
- HVAC calculations.

The following design requirements will be applicable:

- 6.2.0 General Overview of HVAC Systems
 - 6.2.1 HVAC Unit Centralization and Coordination
- 6.2.3 Non-Assembly Spaces (Classrooms, Offices, etc.)
- 6.2.4 Public Assembly Spaces
- 6.2.9 Heating and Cooling Design Parameters (Load Calculations)
- 6.2.22 Kitchen Ventilation
- 6.2.28 HVAC Design Requirement for special spaces

Applicable specification sections to be included are listed below:

- 15970 Temperature Control System (LonWorks BMS/DDC with school operating console)
- 15985 Sequence of operations

Lighting and Views

Q 7.1 Daylight & Views, Daylight 75% of Classrooms

This credit will be achieved by using windows to achieve a total Day lighting Zone that is at least 75% of all the regularly occupied classrooms by computer simulation. A few classrooms will not meet the requirements due to the location of the room with respect to a window wall and its intended function. A calculation will be performed at the 60% Phase after a decision is made by the SCA for the sill height.

This project will comply with the requirements of this credit by designing according to following design requirement:

1.3.1.1 Building Location and Orientation

Applicable specification sections to be included are listed below:

- 08524 Aluminum Projected Windows
- 08800 Miscellaneous Glazing
 - 12501 Chain and Clutch Operated Window Shades

Credit is Feasible

Q 7.2 Daylight & Views, Daylight 90% of Classrooms

This credit is not feasible

This credit will not be achieved. The room configuration and window size dictated by the POR and SCA standards will not allow for 90% of classrooms to meet the daylight requirements. There is one entire floor of Science Rooms that have small windows. Based on Tabular calculation only 69% of classrooms meet the requirement. Once the window standard is finalized, a Revit Daylight model will be prepared to determine if this credit can be achieved at the 60% submission.

Q 7.3 Daylight & Views, Daylight for 75% of Other Spaces

This credit will not be achieved. The cafeteria and Music Room are below grade with no windows. Additionally, there are interior offices with no windows.

Q 7.4 Daylight & Views, Views

Credit is not feasible

Based on current design, of regularly occupied rooms have views (see attached calculations). The cafeteria size and location (Cellar level) reduces the percentage of total square feet having access to views to the exterior. Currently only 72.6% of the areas comply far short of the 90% required. See attached calculations

Q 7.5R Visual Performance, Artificial Indirect Lighting

Credit is feasible and will be pursued (30% Submission)

All classrooms shall be provided with pendant mounted direct-indirect LED lighting fixtures. The use of this type of lighting fixtures will reduce lighting power density (LPD) and, therefore use less energy while delivering a better quality of light to the space. Typically, the ceiling heights will be a 10 feet. The lighting will be at 8'-6" providing an 18" area for deflection of light.

The construction documents will show the lighting layouts and light fixture schedules. At the 60% Phase the point lighting levels (photometrics) calculations for typical and non-typical spaces will be provided.

The following SCA Standard Specifications and Design Requirements will be incorporated:

- 16502 Interior LED Lighting
 - 7.2.1 Interior Lighting

Acoustics

Page 33 of 36

Daylight Calculation Form for Classrooms DAYLIGHT & VIEWS Credit Q7.1, Q7.2

SCA School Construction Authority
NYC Green School Rating Systems

In-House - J. Moy

Architect:

Project:

Academy of American Studies (0575) 28-01 41st Ave LIC, NY 11101 Address:

Compliant area % 1,00 1.00 1.00 1.00 0.00 8 8 1.00 0.00 90. 0.00 1.00 1.00 8 00. 9 1.00 100 1.00 0.0 0.00 0.00 715 1,220 715 698 715 0 698 869 869 869 0 869 869 869 715 Qualifying Daylight 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.12 0.15 - 0.18 0.11 0.15 - 0.18 0.15-0.18 0.15 0.15 - 0.18 0.29 0.15 - 0.18 0.15-0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.00 0.15 - 0.18 0.15 0.15 - 0.18 0.29 0.15 - 0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 0.10 0.15 - 0.18 0.15 0.15 - 0.18 0.15 0.15 - 0.18 Required Daylight Zone 0.17 0.15 Actual Factor 0.16 0.25 0.21 0.43 0.18 J. Song 0.43 0.22 0.14 0.22 0.00 0.22 0.21 0.22 0.22 0.22 0.21 1/23/17 Actual 0.22 0.22 0.21 0.21 0.21 0.21 WFR Factor 00.009 503.00 1220.00 00.009 600.00 00.009 600.00 00.009 00.009 560.00 00.009 600.00 00.009 600.00 449.00 00'009 00.009 900.009 600.00 600.00 600.00 Daylight Daylight Zone 40.00 20.00 20.00 20.00 20 00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 Daylight Zone Depth Date: Preparer: 09.0 0.60 0.60 0.60 0.60 0.60 09.0 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 Transmittance-0.60 0.60 090 0.60 Σij 0.68 99.0 89.0 99.0 0.68 0.68 99.0 0.68 99.0 0.68 0.68 0.68 99.0 0.68 0.68 0.68 99.0 89.0 0.68 0.68 89'0 Actual Glass Area Glazing Data 23 153 153 153 153 153 153 153 153 23 307 153 153 153 53 153 307 307 8 8 Glazing factor 0.88 0.88 0.87 0.87 0.87 0.88 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 0.87 Window Area - WA 176 SF 176 SF 92 SF 176 SF 176 SF 92 SF 353 SF 176 SF SF Ŗ R 353 SF 176 SF R R 176 SF 92 SF 176 SF 176 SF SF 176 176 176 176 23.00 23.00 46.00 23.00 23.00 23.00 46.00 23.00 23.00 23.00 12.00 23.00 23.00 12.00 23.00 46.00 23.00 23.00 23.00 23.00 12.00 Window Width/ Room Window Data Daylight Hgt 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 79.7 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 7.67 Sill Hgt 2.33 2.33 2.33 2.33 2.33 2.23 2.33 2.23 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 Effective Head Hgt 10.00 Floor Area -715 SF 715 SF 715 SF 449 SF SF 698 SF 698 SF 1220 SF 715 SF 698 SF 715 SF 715 SF 715 SF 698 SF 698 SF R 698 SF 560 SF Ā 503 715 869 869 Design #: 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 37.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 30.00 301 ART CLASSROOM SPECIAL ED CLAS SPCL ED CLASSR CLASSROOM 18 CLASSROOM 16 CLASSROOM 01 CLASSROOM 10 CLASSROOM 12 CLASSROOM 13 CLASSROOM 14 CLASSROOM 15 CLASSROOM 05 CLASSROOM 06 CLASSROOM 08 CLASSROOM 11 CLASSROOM 03 CLASSROOM 04 CLASSROOM 09 CLASSROOM 07 CLASSROOM 01 RESOURCE RM RM Name 104408 310 228 126 128 214 224 114 216 226 229 230 233 124 125 130 131 RM# 111 127 231 116 LW:

DAYLIGHT & VIEWS
Daylight Calculation Form for Classrooms
Credit Q7.1, Q7.2

Project: Academy of American Studies (Q575) Address: 28-01 41st Ave LIC, NY 11101

LLW: 104408

Design #:

Compliant area %

Qualifying Daylight Area

SCA School Construction Authority
NYC Green School Rating Systems

In-House - J. Moy J. Song 1/23/17

Architect: Preparer: Date:

1.00

715

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# 2	2 2 2 2					Window Data	ģ		Glazir	Glazing Data	Transmittance- VLT	ttance-	Davlight Zone		WFR Factor	Daylight Zone Factor	Zone
		٦	Floor Area - FA	Effective Head Hgt	Sill Hgt	Daylight Hgt	Vindow Width/ Room	Window Area - WA	를 를	Glass Area	Actual	Min.	Daylight Zone Depth	Daylight Area	Actual	Actual	Required
311	CLASSROOM 17	30.00	715 SF	10.00	2.33	7.67	23.00	176 SF	0.87	153	0.68	0.60	20.00	00.009	0.21	0.15	0.15 - 0.18
312	CLASSROOM 19		-,					-	-								
314	RESOURCE RM 02	23.00	373 SF	10.00	2.23	79.7	8.00	61 SF	0.88	54	0.68	09.0	20.00	373.00	0.14	0.10	0.15 - 0.18
324	CLASSROOM 20	30.00	715 SF	10.00	2.33	797	23.00	176 SF	0.87	153	0.68	0.60	20.00	00.009	0.21	0.15	0.15-0.18
326	CLASSROOM 21	30.00	715 SF	10.00	2.33	79.7	23.00	176 SF	0.87	153	0.68	0.60	20.00	00.009	0.21	0.15	0.15 - 0.18
327	CLASSROOM 26	30.00	715 SF	10.00	2.33	7.67	23.00	176 SF	0.87	153	0.68	0.60	20.00	600.00	0.21	0,15	0.15-0.18
328	CLASSROOM 22	30.00	715 SF	10.00	2.33	79.7	23.00	176 SF	0.87	153	0.68	09.0	20.00	600.00	0.21	0.15	0.15 - 0.18
329	CLASSROOM 25	30.00	719 SF	10.00	2.33	79'1	23.00	176 SF	0.87	153	0.68	09 0	20.00	00'009	0.21	0.15	0.15 - 0.18
330	CLASSROOM 23	30.00	690 SF	10.00	2.33	79.7	23.00	176 SF	0.87	153	0.68	09.0	20.00	600.00	0.22	0.15	0,15 - 0.18
334	CLASSROOM 24	30.00	719 SF	10.00	2.33	79.7	23.00	176 SF	0.87	153	0.68	0.60	20.00	00'009	0.21	0,15	0,15 - 0,18
1	CLASSROOM 28	ç	740 SF	10.00	2 33	7.67	23.00	176 SF	0.87	153	0,88	090	20 00	800 00	0 21	0.15	0.15-0.18
		8	2			101		1,1	ТТ	[[Ш		
<u>+</u>	CLASSROOM Z/	30.00	715 SF	00.01	2.33	/9./	23.00	0/1) O. O.	2	0.68	09:0	20.00	00.009	17.0	o C	81.0 - 61.0
412	CLASSROOM 29	30.00	719 SF	10.00	2.33	79'.	23.00	176 SF	0.87	153	0.68	09'0	20.00	00 009	0.21	0.15	0.15 - 0.18
424	TRIFACIAL SR	30.00	1220 SF	10.00	3.00	2.00	28.00	196 SF	0.88	172	0.68	09.0	20.00	00.009	0.14	0.10	0.15 - 0.18
425	SCIENCE DEMO	30.00	750 SF	10.00	3.00	7.00	23.00	161 SF	0.87	140	0.68	09'0	20.00	600.00	0.19	0.13	0.15 - 0.18
426	S SCIENCE PREP	30.00	500 SF	10.00	3.00	7.00	4.00	28 SF	0.88	25	0.68	09.0	20.00	500.00	0.05		0.03 0.15 - 0.18
427	7 SCIENCE PREP	30.00	400 SF	10.00	3.00	7.00	8.00	56 SF	0.88	49	0.68	09.0	20.00	400.00	0.12	0.08	0.15 - 0.18
428	8 TRIFACIAL SR	30.00	1220 SF	10.00	3.00	7.00	28.00	196 SF	0.88	172	0.68	09.0	20.00	900.009	0.14	0.10	0.15 - 0.18
429	9 SCIENCE DEMO	30.00	750 SF	10.00	3.00	7.00	23.00	161 SF	0.87	140	0.68	09.0	20.00	900.00	0.19	0.13	0.15 - 0.18
431	1 CLASSROOM 30	30.00	719 SF	10.00	2.33	7.67	23.00	176 SF	0.87	153	0.68	09.0	20.00	600.00	0.21		0.15 0.15 - 0.18
4																	

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SCA School Construction Authority
NYC Green School Rating Systems In-House - J. Moy J. Song 1/23/17 Date: Preparer: Architect Project: Academy of American Studies (Q575) Design #: DAYLIGHT & VIEWS
Daylight Calculation Form for Classrooms
Credit Q7.1, Q7.2 Address: 28-01 41st Ave LIC, NY 11101

:ILW:	104408	174	Design #:											Date:		1/23/17				
R #	RM Name					*	Window Data	8		Glazin	Glazing Data	Transmittance- VLT	tance-	Daylight Zone		WFR Dayligh	Daylight Zone Factor		Qualifying Daylight Area	Compliant area %
			Floor Arr FA	- 88		Sill Hgt	Daylight Hgt	Window Width/ Room	Window Glazing Glass Area - WA factor Area	Glazing factor	Glass Area	Actual	Min.	Daylight Zone Depth	Daylight A	Actual	Actual	Actual Actual Required		
	SF Area being evaluated for Daylight factor		29529	RS		< 4C				×									20,384	
								=											%09	
Requii Requii	Requirement to achieve credit Q7.1 is Daylight in 75% of classroom areas Requirement to achieve credit Q7.2 is Daylight in 90% of classroom areas	l edit Q7.1 edit Q7.2	I is Daylig is Dayligl	nt in 75% o nt in 90% o	f classro f classro	om areas	(n (n	c	_	_		_	-	-	Complies? (Y/ N): Complies? (Y/ N):	(%/ N): (%/ N):	22			
																	£			

Note that due to window frame widths, etc, the glazed area with the sill at 2'-4" will be above the 2'-6" height that counts towards compliant window area

Directions

It is permissible to

Copy additional Enter room

Enter glazing factor multiplier based on window height and number of windows number, room window width,

per Masonry opening from table

'n

Enter Minimum

Factor. The default value used is to be 0.68, which is the minimum

Transmittance

Visible

required per the SCA standard specification.

Daylight Calculation Form for Classrooms DAYLIGHT & VIEWS Credit Q7.1, Q7.2

Project. Academy of American Studies (Q575) Design #: Address: 28-01 41st Ave LIC, NY 11101 104408 LLW:

SCA School Construction Authority
NYC Green School Rating Systems WFR Daylight Zone Factor Factor In-House - J. Moy J. Song 1/23/17 Date: Architect: Preparer:

Compliant area %

Actual Actual Required

Qualifying Daylight Area

Daylight Area Daylight Zone Daylight Zone Depth Transmittance-Ĭ. Actual ٧LT Glass Area Glazing Data Glazing Area - WA factor Window Width/ Window Room Window Data Daylight Ę Sill Hgt Effective Head Hgt Floor Area -ΕĀ

_

RM Name

RM#

keeping with LEED determine if part of the room meets the may be considered factor. However, if design, use lowest Check that all subfigure for specified the room does not individual bays to contributes to the Verify/enter actua evenly distributed meet the daylight specified glazing. requirement, the broken up to the transmittance for daylight area in total figures are across the room room should be The entire room For projects in Credit IEQ 8.1 as a bay if the and meets the daylight zone windows are zone factor criteria and

Where a sofft/ceiling is lower than the window head height, the head height and daylight zone need to be modified accordingly as per diagram in GSG Credit Q7.1.

Table 1 (based on 1'-5" operable sash, 1" masonry wind break, and receptor)

methodology.

0

					WINDOW
	Number of Window/MO	f Windo	W/WO		height
Nominal window					
width	1	2-3	9-4	2-3 4-6 7 and more	
	0.88	0.87	0.87 0.86	0.85	84
	0.88	0.87	0.87	0.87	88
48	0.89	0.88	0.87	0.86	≥ 92"
	0.88	0.86	0.86	0.85	84"
	0.88	0.87	0.87 0.86	0.85	

SCA School Construction Authority
NYC Green School Rating Systems In-House - J. Moy J. Song 1/23/17 Preparer: Date: Architect: Project: Academy of American Studies (Q575) DAYLIGHT & VIEWS
Daylight Calculation Form for Classrooms
Credit Q7.1, Q7.2 Address: 28-01 41st Ave LIC, NY 11101

104408 Design #:	Design #:	Design #:							2				Date:	80	1/23/17				
RM Name					5	Window Data	, a		Glazing Data		Transmittance- VLT	апсе-	Dayligh	Daylight Zone	WFR Factor	WFR Daylight Zone Factor Factor		Qualifying Daylight Area	Compliant area %
Floor Area - Effective Sill Hgt Daylight Window Width/	Floor Area - Effective Sill Hg	Floor Area - Effective Sill Hg	Effective Head Hgt	Sill Hg	-	Daylight Hgt	Window Width/ Room	Window Glazing Glass Area - WA factor Area	Glazing factor	Glass Area	Actual	Min.	Daylight Zone Depth	Daylight Daylight Ac Area	Actual	Actual Actual Required	equired		
40 0.89 0.87 0.86 ≥ 92 "				≥ 92"															
0.86 0.85 0.84	0.86 0.85 0.84	0.86 0.85 0.84		84"	Г														
0.88 0.86 0.85 88"	0.86 0.86 0.85	0.86 0.86 0.85		.88															
	0.87 0.86 0.85	0.87 0.86 0.85		≥ 92′															

DAYLIGHT & VIEWS Views Calculation Form Credit Q7.4



Project:	Academy of American Studies	Architect: In-House
Address:	LIC, NY	Preparer: J. Dias
LLW #:	104408	Date: 1/30/17
Decise #		

RM #	RM NAME	Total Occupiable Area in SF	36" for rooms used by for PK-thru 5 grades	zontal View at: 42" for rooms used by for 6-thru 12 grades and offices	Step 2: Calculated Area or Room that Does Not have Direct Line of Sight to Perimeter Vision Glazing	
			Y/N/NA	Y/N/NA		
ELLAR		4054	A1/A	Y	4951.00	-
01	CAFETERIA	4951 192	N/A N/A	Y	192.00	-
003	SERVERY	1514	N/A N/A	Y	1514.00	
05	KITCHEN	96	N/A	Y	96.00	
05E	OFFICE	333	N/A	Y	333.00	
208	SCHOOL SAFETY OFFICE HS MUSIC CR	993	N/A	Ý	993.00	
2009	HS MUSIC PRACTICE ROOM	125	N/A	Y	125.00	
09B	CUSTODIAN'S OFFICE	334	N/A	Ý	334.00	,
,00	COSTODIANS OFFICE	95.		1.		
ST FLOC	DR .					
02	LIBRARY	1399	N/A	Y	50.00	1,3
02A	LIBRARIAN'S OFFICE	151	N/A	Y	151.00	4
.03	GENERAL OFC/WAITING RM	628	N/A	Y	628.00	
05	GUIDANCE/SAT/HS/COLL/VOC SUITE	312	N/A	Υ	20.00	2
06	PROG OFC/ATS SUITE	299	N/A	Y	299.00	
07B	PRINCIPAL'S OFF	514	N/A	Y	20.00	4
07C	PARENT/COMMUNITY OFF	355	N/A	Y	20.00	3
07D	GUIDANCE SUITE	600	N/A	Y	600.00	-
08	STAFF LUNCH ROOM	592	N/A	Y	20.00	5
109	MEDICAL SUITE	666	N/A	Y	666.00	10
10	TECH LAB (CADD)	1,402	N/A	Y	18.00	1,3
11	CLASSROOM 01	721	N/A	Y	9.00	7
14	CLASSROOM 02	743	N/A	Y	9.00	7
16	CLASSROOM 03	750	N/A	Y	18.00	
23	SUPERVISORY OFFICE 01	239	N/A	Υ	239.00	
24	CLASSROOM 04	722	N/A	Y	18.00	7
25	CLASSROOM 09	718	N/A	Y	18.00	7
26	CLASSROOM 05	720	N/A	Y	18.00	7
127	DISTRICT SPECIAL ED CLASSROOM 01	570	N/A	Y	9.00	5
28	CLASSROOM 06	721	N/A	Y	18.00	7
130	CLASSROOM 07	699	N/A	Υ	18.00	6
131	CLASSROOM 08	770	N/A	Y	18.00	7
2ND FLO		320	N/A	Y	320.00	
201D	HEALTH INSTRUCTOR'S OFFICE	169	N/A	Y	169.00	
209	DEAN'S OFFICE 02	743	N/A N/A	Ÿ	18.00	7
214	CLASSROOM 10	743	N/A	Y	18.00	7
216	CLASSROOM 11	721	N/A	Y	18.00	7
224	CLASSROOM 12	721	N/A	Y	18.00	7
226	CLASSROOM 13	721	N/A	Y	18.00	7
228	CLASSROOM 14	699	N/A	Y	18.00	6
230	CLASSROOM 15	503	N/A	Y	10.00	4
231	DISTRICT SPCL ED CLASSRM 02 CLASSROOM 16	770		Y	18.00	7
233	CLASSROOM 10	7.0	107			
RD FLO	OB					
301	ART CLASSROOM	1220	NA NA	Y	0.00	1,2
310	CLASSROOM 18	743		Y	18.00	7
311	CLASSROOM 17	721		Y	9.00	7
312	CLASSROOM 17	721		Y	18.00	7
314	RESOURCE ROOM 02	373		Y	9.00	3
323	DEAN'S OFFICE 03	165		Y	165.00	
324	CLASSROOM 20	721		Y	18.00	7
325	STAFF WORK ROOM	435		Y	0.00	4
326	CLASSROOM 21	721		Y	18.00	7
327	CLASSROOM 26	727		Y	18.00	7
328	CLASSROOM 22	721		Y	18.00	
329	CLASSROOM 25	786		Υ	18.00	
330	CLASSROOM 23	699		Y	18.00	•
331	CLASSROOM 24	770		Y	18.00	
TH FLO					40.00	
410	CLASSROOM 28	743		Y	18.00	7
411	CLASSROOM 27	721		Y	9.00	7
412	CLASSROOM 29	757		Y	18.00	
423	SUPERVISORY OFFICE 02	125		Y	18.00	1
424	SCIENCE LAB - TRIFACIAL	1,235		Y	18.00	1,2
425	SCIENCE DEMO ROOM	863		Y	18.00	- 4
	SCIENCE LAB - TRIFACIAL	1220		Y	18.00	1,2
428	CONTRACT DELLO DOCLI	808	NA NA	Y	18.00	1
428 429	SCIENCE DEMO ROOM				45.55	
	CLASSROOM 30	770		Y	18.00	

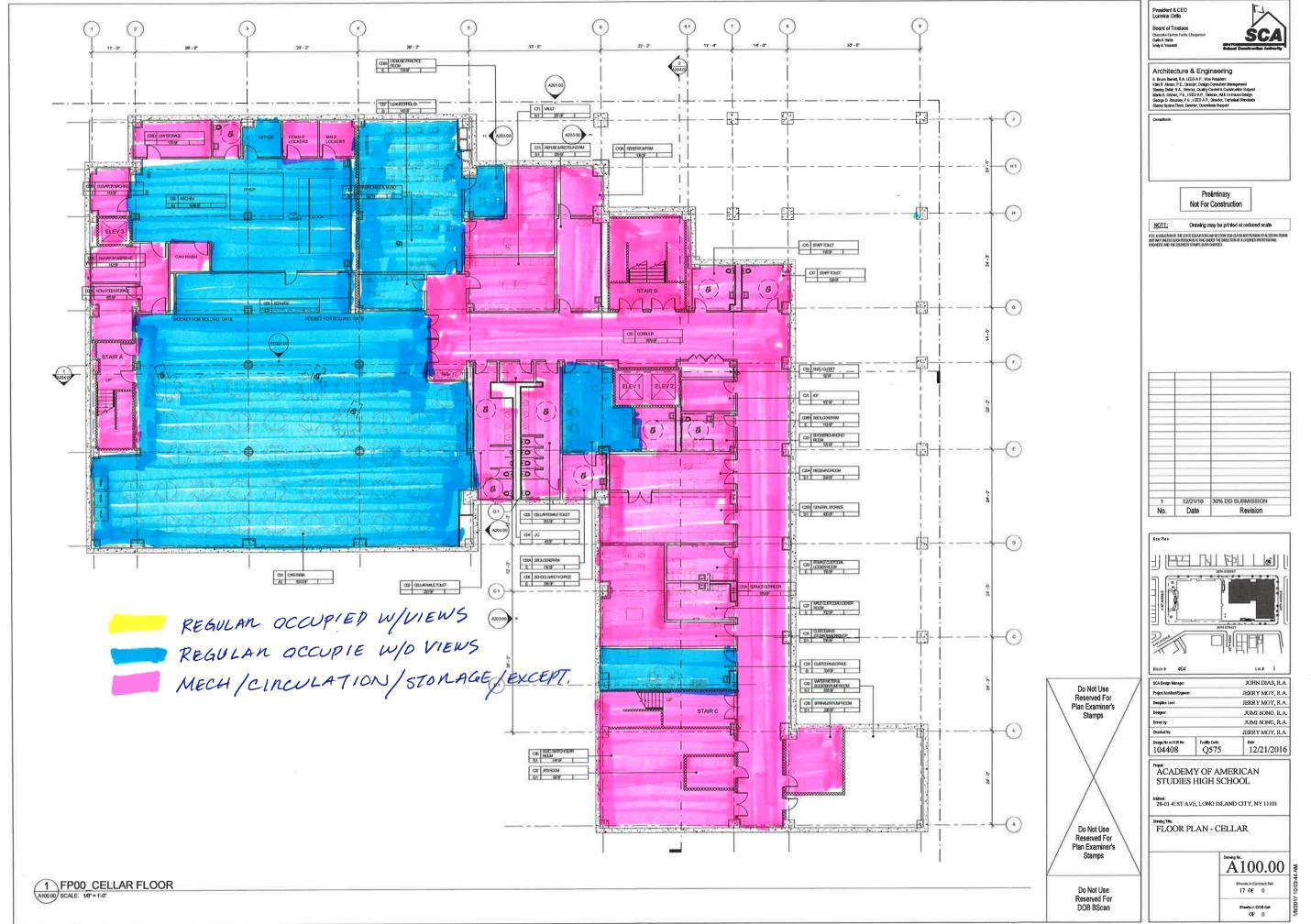
			Y/N/NA	Ţ.	Y/N/NA	
Requirem	ent to achieve credit Q 7.4 is Views for 9	0% of regularly occupi	ed spaces			Complies? (Y / N): N
Directions: 1. 2. 3.	Determine which spaces are regularly occ Copy additional lines as required for each	room to be included on	this form.	•	•	se spaces on this form. The types of spaces that nter "0" in Compliant Area column for these

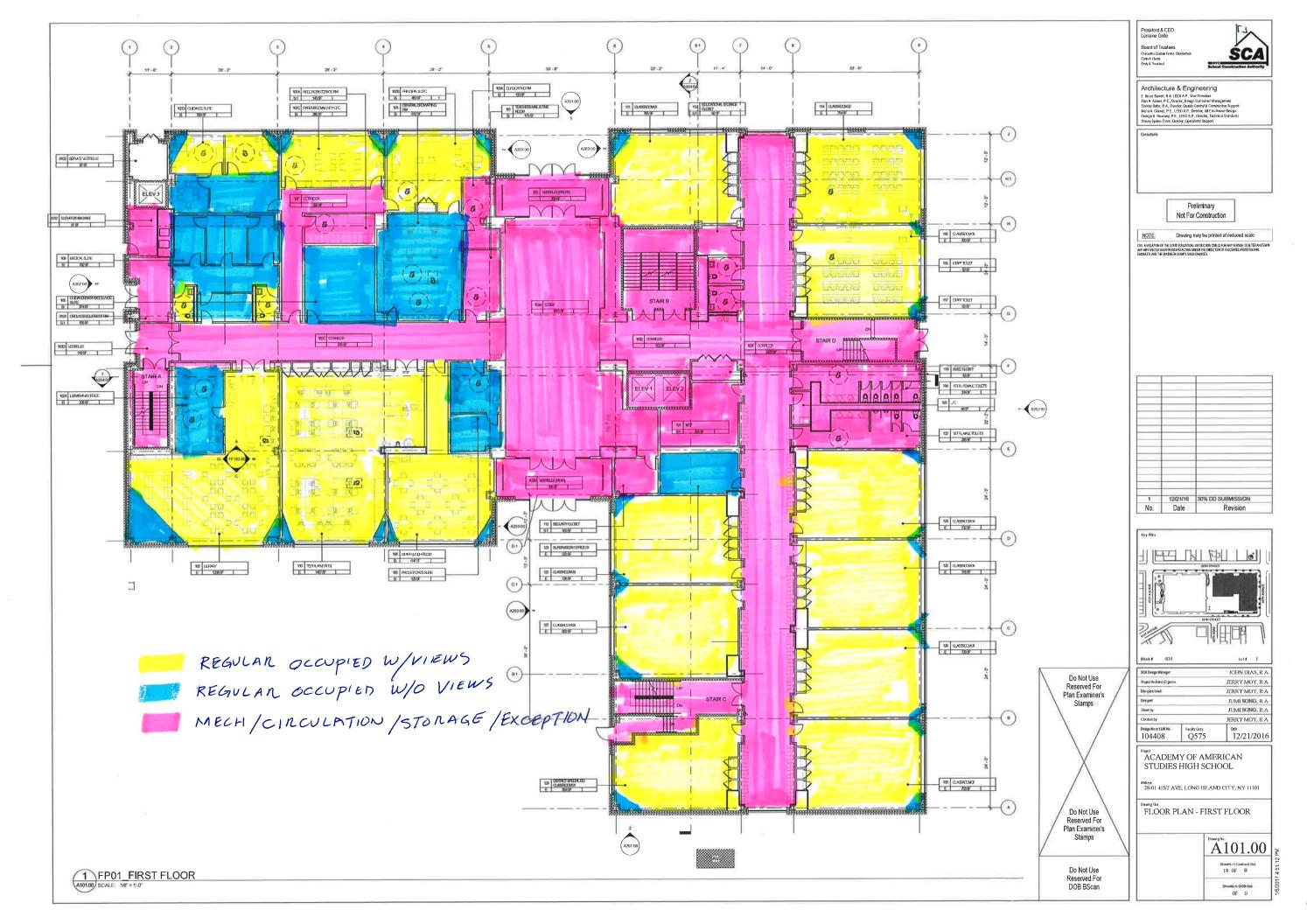
- For regularly occupied spaces requiring
 Enter room number, room name, SF of room, whether room has glazing at 36" or 42" and non compliant floor area in room (for those spaces with glazing at applicable height).
 Check that all sub-total figures are included in worksheet cells summing SF OF AREA BEING EVALUATED FOR VIEWS and SF OF AREA WITH VIEWS. 4. 5.
- 6.

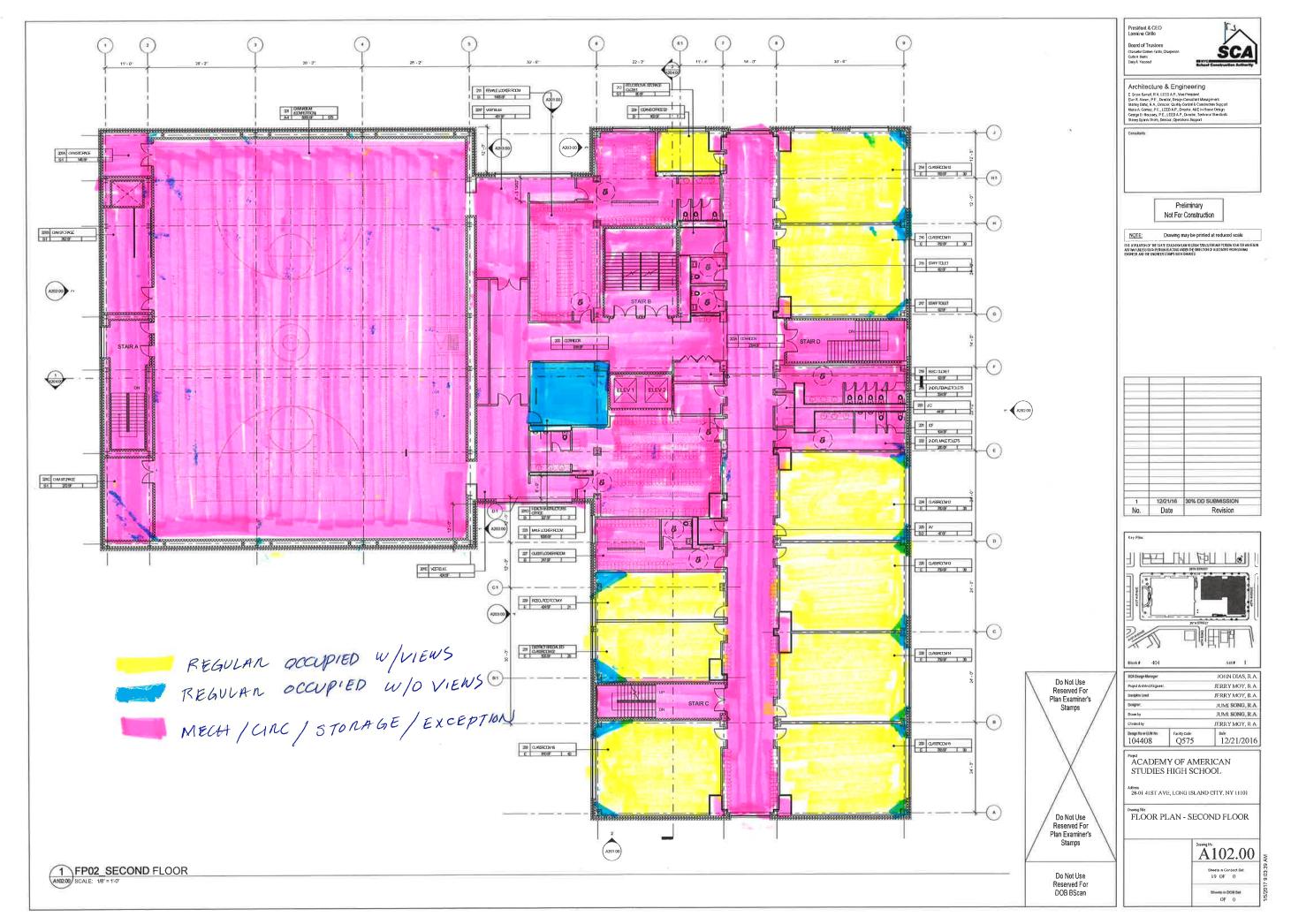
Notes:

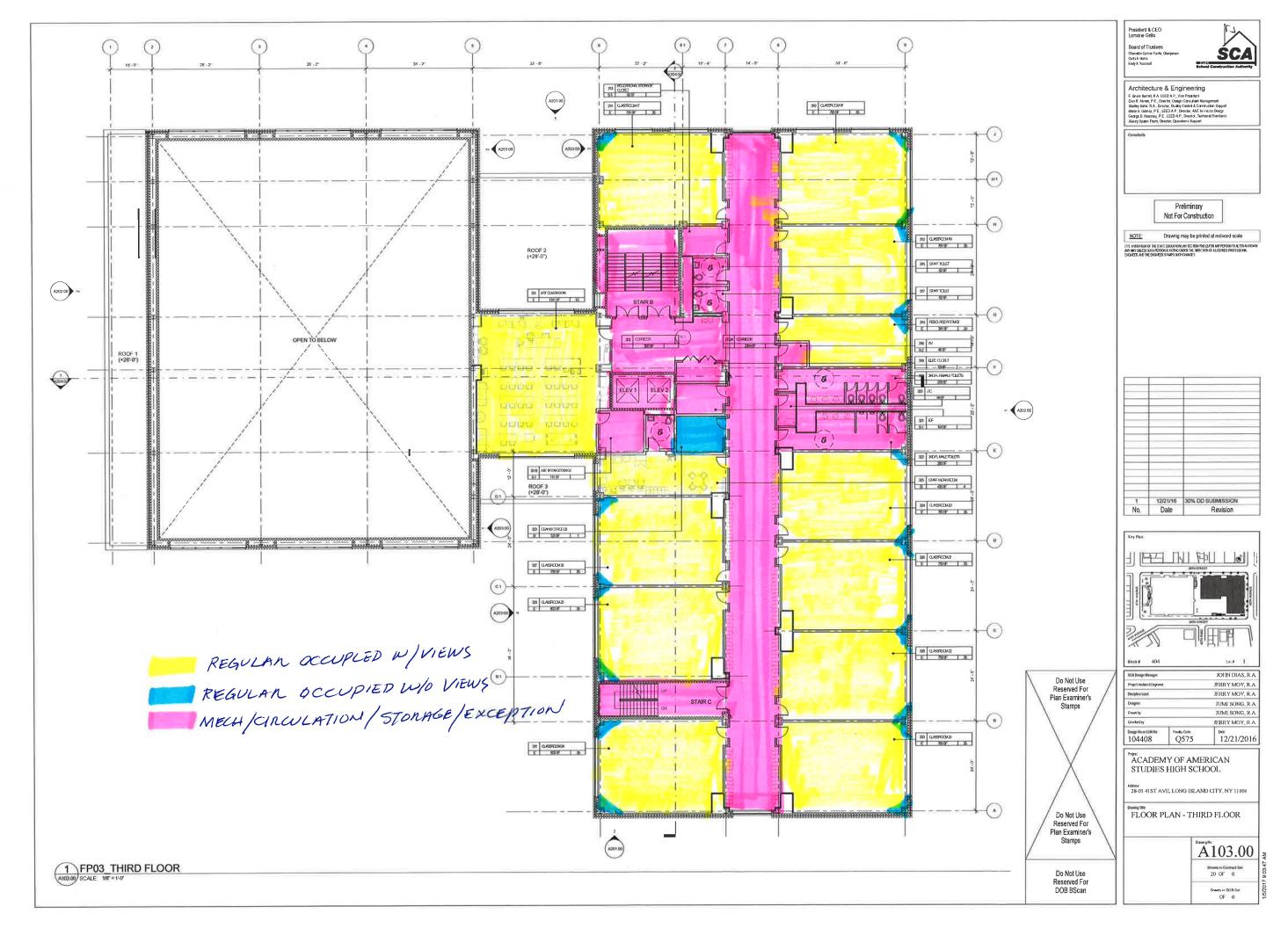
Line of sight may be drawn through interior glazing. For multi-occupant spaces, the actual square footage with direct line of sight to perimeter vision glazing is

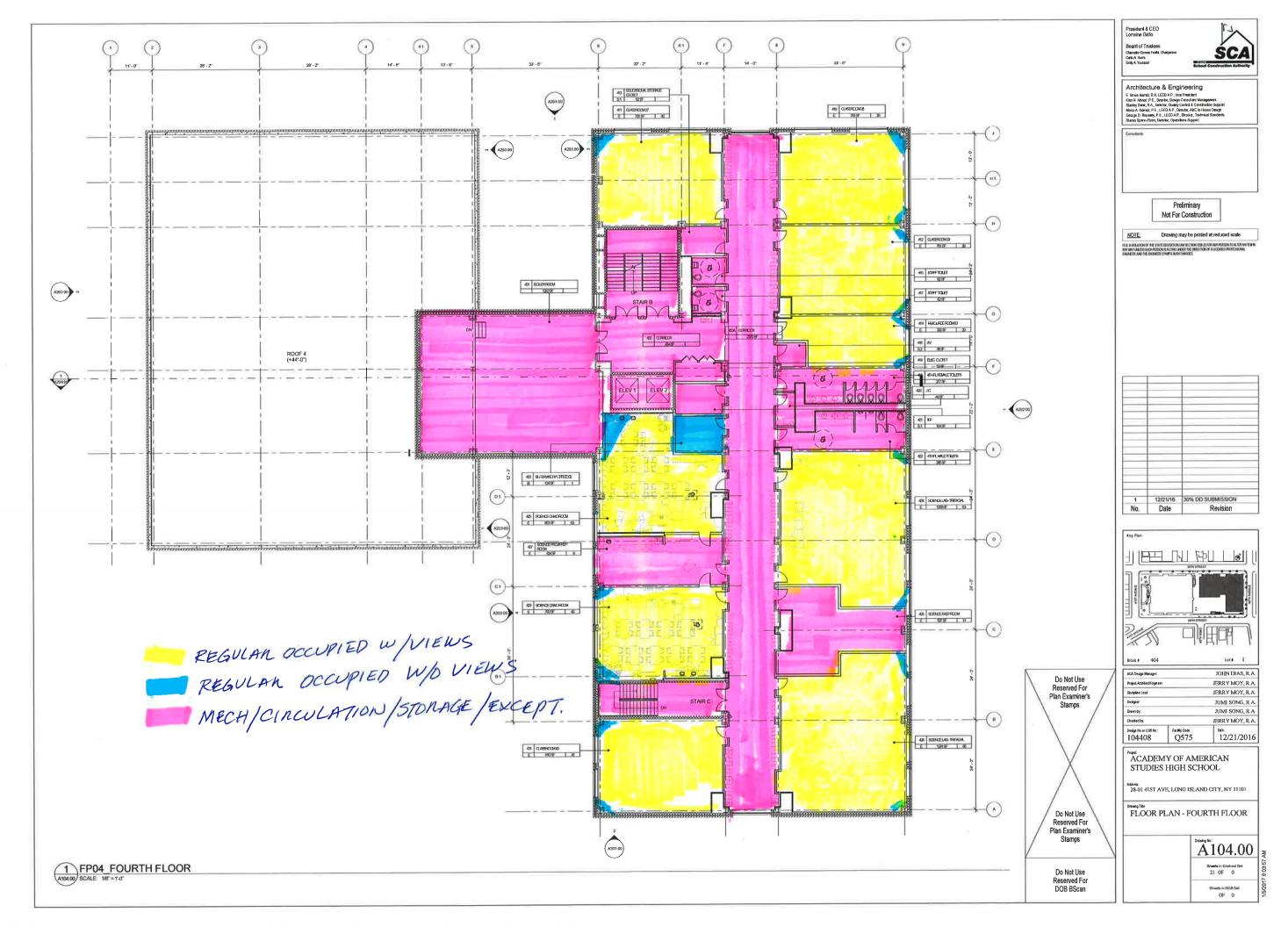
04/30/16











Q 8.1P Minimum Acoustical Performance

Credit is feasible and will be pursued

The credit will be achieved by complying with all the SCA Design Standards:

The design team includes an Acoustical Consultant, Ostergaard) who will review the design for compliance with LEED for Schools 2009 IEQ PR 3 Minimum Acoustical Performance; ANSI/ASHRAE Standard S12.60-2002 Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools and ASHRAE Handbook Chapter 47 Sound and Vibration Control 2003 HVAC.

The Acoustical Consultant will review the following acoustical performance requirements for classrooms:

- 1. Reverberation time:
- 2. Sound isolation performance of exterior façade construction assemblies
- 3. Sound isolation from exterior noise sources;
- 4. Background noise levels associated with HVAC equipment;
- 5. Interior construction assemblies to meet the required STC rating.
- 6. Isolation from other interior spaces (offices, cafeteria).

For Q8.1R: The SCA Design Standards are:

- DR1.3.1.9 Architectural Acoustic Standards
- DR4.2.1 Exterior Masonry Walls
- DR4.3.1 Window Types
- DR5.1.1 Typical Room Finishes
- DR5.2.2 Interior Partitions
- Dr5.3.1 Floor Types
- DR5.4.1 Suspended Ceilings
- DR5.5.1 Interior Doors and Frames
- DR6.2.25 HVAC Acoustical Standards
- SS08524 Aluminum Projected Windows
- SS09260 Gypsum Board Assemblies
- SS09510 Acoustical Ceilings
 - SS15891 Metal Ductwork
- SS15910 Duct Accessories
- SS15993 Balancing of Systems
- SD0926010a Partition Details
- SD0926010b Partition Details

Q 8.2 Enhanced Acoustical Performance & Sound Isolation for Special Spaces

Credit is feasible and will be pursued

The credit will be achieved by complying with the current SCA Design Standards.

The Music Suite will have a sound isolative slab. The MER equipment will be on isolators for vibration control. Mechanical equipment will be selected to reduce background noise levels to 45 dBA or less in classrooms and library; 40dBa in offices and 50 dBa in corridors. The building shell, classroom partitions and the other core learning space partitions will be designed to meet the Sound Transmission Class (STC) requirements of ANSI Standard S12.60-2002. Windows will meet an STC of at least 35.

This project will comply with the requirements of this credit by designing to the following design requirements:

- DR1.3.1.9 Architectural Acoustic Standards
- DR4.2.1 Exterior Masonry Walls

- DR4.3.1 Window Types
- DR5.1.1 Typical Room Finishes
- DR5.2.2 Interior Partitions
- DR5.3.1 Floor Types
- DR5.5.1 Interior Doors and Frames
- DR6.2.25 HVAC Acoustical Standards

Applicable Specification Sections to be included are listed below:

- SS08524 Aluminum Projected Windows
- SS09260 Gypsum Board Assemblies
- SS09510 Acoustical Ceilings

Applicable Specification Sections to be included are listed below:

- 0926010a Partition Details
- 0926010b Partition Details

Q 8.3R Acoustic Windows

Credit is feasible and will be pursued

There are transit facilities adjacent to or near the proposed building that may create noise (see attached preliminary report dated 1/13/17 from Cerami).

Applicable Specification Sections:

SS08524 Aluminum Projected Windows

Regional Credits

R1.1 Regionally Defined Credit Achieved Upon SCA request only.

R1.2 Regionally Defined Credit Achieved **Upon SCA request only.**

R1.3 Regionally Defined Credit Achieved **Upon SCA request only.**

R1.4 Regionally Defined Credit Achieved **Upon SCA request only.**

Additional Credits

Required Support

A 1.1R LEED® Accredited Professional

Credit is feasible and will be pursued

See attached copy of certificate for John Dias.

Innovation in Design

A 1.2 Innovation or Exemplary Performance Upon SCA request only.

A 1.3 Innovation or Exemplary Performance Upon SCA request only.

Optional - Site Impact

A 2.1 Heat Island Effect, Non-Roof Upon SCA request only.

A 2.2 Storm water Design, Quantity Control Upon SCA request only.

A 2.3 Active Design in a School Environment

SCA GSG committee requested the Design team to research and implement this credit if feasible. Based on the attached, 7 out of 10 features can be implemented in the design to achieve this credit. With the exception of Stair Visibility (2) Daylighting (7) and Artwork (9), the main circulation stair opposite the elevators can meet the remaining 7 features.

A 3.1 Enhanced Commissioning

Upon SCA request only.

A 3.2 Optimize Energy Performance

NYC SCA directed the project team to pursue project specific energy modeling. It is assumed that a minimum of 4 points will be earned.

A 3.3 On Site Renewable Energy

Upon SCA request only.

A 3.4 Enhanced Energy Management System Controls, HVAC and Hot Water Systems

Upon SCA request only.

Optional - IEQ

A 4.1 Low-Emitting Materials, Ceiling and Wall Systems

Upon SCA request only.

Optional - Education

A 5.1 The School Building as a Teaching Tool Upon SCA request only.

SCA Q575 Academy of American Studies 30% DD Acoustic Review

Prepared For: Thomas Kurian **NYC School Construction Authority** 3030 Thomson Ave Long Island City, NY 11101

January 13, 2017





We have completed our review of the 30% Design Drawings Submission, dated December 21, 2016, for the Q575 Academy of American Studies High School project. The following report includes our findings, comments, and recommendations based on the requirements outlined in the School Construction Authority (SCA) Design Guidelines and coordination between the SCA and Cerami on past projects.

1.0 ACOUSTIC CRITERIA & TERMINOLOGY

1.1 Background Noise Levels

In describing interior background noise levels, we refer to the Noise Criterion (NC) ratings as established by ASHRAE. The NC ratings are a single-number rating system corresponding to the steady-state background noise level within a space due to building mechanical, plumbing, electrical, and elevator systems.

SCA Design Guidelines Revision 8, Section 6.2.25 outlines the maximum acceptable background noise levels for each room use as shown in Table 1.

Table 1: SCA Background Noise Level Design Goals

Space Type	NC	dBA
Classrooms	35	40
Music Classroom	35	40 -
Principal's/Private Offices	35	40
Conference Rooms	35	40
Library	40	45
Labs	40	45
Gymnasium	40	45
General Circulation/Lobby Areas	45	50
Cafeteria	45	50
Toilets	50	55
Storage	50	55
Kitchen	50	55

1.2 Sound Transmission Class (STC)

Sound Transmission Class (STC) is a single number; laboratory tested rating corresponding to the degree of sound separation through a partition, slab, door, etc. A higher STC rating corresponds to greater sound separation.

SCA Design Guidelines Revision 1, Section 1.3.1.9 outlines requirements for sound isolation between instructional spaces and adjacent areas as defined by Table 2.

Table 2: SCA Airborne Sound Isolation Requirements

Adjacent Space	STC Rating
Classroom	50
Corridor	45 (excluding entry doors, which shall achieve STC-35)
Gang Toilets	53
Music Room	60
Mechanical	60
Gym	60



Adjacent Space	STC Rating
Cafeteria	60

1.3 Impact Insulation Class (IIC)

The Impact Insulation Class (IIC) is a single number rating that defines a floor/ceiling construction's ability to prevent impact noise transmission (i.e. footfall noise). A higher IIC rating corresponds to more impact isolation.

SCA Guidelines Revision 1, Section 1.3.1.9 outlines the requirements for impact isolation between instructional spaces and overhead spaces as defined by Table 3.

Table 3: SCA Floor/Ceiling Impact Isolation Requirements

AdJacent Overhead Space	IIC Rating
Classroom	45
Office	45
Kitchen	50
Cafeteria	50
Gymnasium	60

1.4 Reverberation Time

Reverberation time is a measure of how long a sound 'lingers' within a room. A more reverberant room is typically described as 'lively' or 'bright' where a less reverberant room is described as 'dead'.

SCA Design Guidelines Revision 1, Section 1.3.1.9 outlines the maximum reverberation time for learning spaces by room volume. The reverberation times for unoccupied core learning spaces in the 500, 1,000, and 2,000 Hz octave bands shall not exceed the following:

- 0.6 seconds for room volumes of up to 10,000 cu. ft.
- 0.7 seconds for room volumes of 10,000 to 20,000 cu. ft.

For classrooms, use of an acoustical ceiling tile with a minimum NRC rating of 0.70 will achieve these goals in most instances.

2.0 Partitions

SCA Design Guidelines Revision 1, Section 1.3.1.9 defines typical partition constructions and corresponding STC ratings as shown in Table 4.



Table 4: SCA Partitions STC Ratings	CCA Destriction Tons	Dodlel Doddel
STC Rating Constructions	SCA Partition Type	Partition Description
STC-60	Type 14 (Chase Partition)	Two (2) layers of 5/8-inch thick gyp board on both sides of separate steel stud tracks spaces a minimum 1-inch apart.
STC-55	Type 9	Staggered steel studs in a single track with two (2) layers of gypsum board on each side of the stud and a 2-inch thick sound attenuating blanket in the cavity. The depth of the studs may be 3-5/8-inches or 4-inches based on depth required for floor to floor heights. 8-inch grout filled Masonry Wall
	Od	Three (3) layers of 5/8-inch thick
	Type 7	gypsum board on both sides of 6-inch thick 25ga. metal studs with 5-inch thick batt insulation in the stud cavity. Run partition from slab to slab.
STC-50	Type 3	Two (2) layers of 5/8-inch thick gypsum board on one side, and one (1) layer on the other side, of a 3-5/8-inch thick 20 ga. Metal stud with a 3-inch thick sound attenuating blanket in the cavity. Run partition from slab to slab.
STC-45	Type 1	One (1) layer of 5/8-inch thick gypsum board on both sides of 3-5/8" metal studs and 3" sound attenuating blanket in the cavity.

2.1 Classrooms

Classroom partitions separating adjacent Classrooms should be Type 9 which consists of two (2) layers of 5/8-inch thick gypsum board on both sides of staggered steel studs with batt insulation in the cavity.

For Classroom partitions separating Classrooms from Corridors, we recommend partition Type 3 which consists of two (2) layers of 5/8-inch thick gypsum board on one side, and one (1) layer on the other side, of a 3-5/8-inch thick 20 ga. metal stud with a 3-inch thick sound attenuating blanket in the cavity. Run partition from slab to slab.

2.2 Music Room

Drawing A100.00 identifies the music classroom as being adjacent to the kitchen and Dean's Office. We recommend the wall between the Kitchen and Music Room be partition Type 8A which is an 8-inch



thick CMU wall. Additionally, we recommend furring out two (2) layers of 5/8-inch thick gypsum board with batt insulation in the stud cavity from one side of the CMU partition.

For the demising wall separating the Music room and Dean's office, we recommend partition Type 14 which consists of Two (2) layers of 5/8-inch thick gyp board on both sides of separate steel stud tracks spaces a minimum 1-inch apart.

2.3 Bathrooms

Typical bathrooms partitions are recommended to include two (2) layers of 5/8-inch thick gypsum board on both sides of a 3-5/8-inch thick 20 ga. metal stud with a 3-inch thick sound attenuating blanket in the stud cavity (Type 5).

2.4 Office, Conference, & Administrative Rooms

Conference and Office Room partitions are recommended as Type 5 which consists of two (2) layers of 5/8-inch thick gypsum board on both sides of metal studs with batt insulation in the stud cavity. The second-floor plan shows the Dean's office next to a locker room. For the Dean's Office and other rooms adjacent to lockers we recommend partition Type 9.

2.5 Elevator Shaft Partition

We note several locations where the elevator shaft is directly adjacent to a classroom or office. At these locations, we recommend that the elevator shaft partitions consist of two (2) layers of gypsum board on metal studs, separated from the shaft by a minimum 1-inch airspace, with batt insulation in the stud cavity. The airspace provided by this partition will significantly aid in minimizing structural noise transmission into sensitive spaces during elevator passbys.

3.0 Doors

3.1 Classrooms, Exercise Room, and Music Room

Based on SCA Guidelines, Classroom doors are required to meet an STC-35 construction. To meet this requirement, we recommend that all Classroom and Music Room Entry Doors consist of either a solid wood or insulated hollow metal construction and full perimeter seals. Seals at the head and jamb should be as or similar to Zero International #770.

3.2 Principal's Office and Conference Rooms

We recommend increased acoustical separation through the entry door to the Conference Room and Principal's Office. We recommend that the doors be solid wood or insulated hollow metal and include full perimeter seals. Seals at the head and jamb should be as or similar to Zero International #188. Seals at the door bottom should be automatic drop seals as or similar to Zero International #360. We provide similar door recommendations for other private offices with the exception of the drop bottom seals.

3.3 Private Offices

We recommend that private office doors be solid wood or insulated hollow metal and include seals at the head and jamb as or similar to Zero International #188.

3.4 Mechanical Rooms

For Mechanical Rooms, we recommend doors be butt hinged solid wood or insulated hollow metal with full perimeter seals. Seals at the head and jamb should be as or similar to Zero International #770. Seals at the door bottom should be automatic drop seals as or similar to Zero International #360.



4.0 Interior Finishes

4.1 Gym

SCA standard finishes include, although not indicated in current drawing set, wood floor and acoustic block above wall pads (pads up to roughly 7' above floor). With these finishes, the RT in the Gym will not exceed 2.0 seconds. The RT can be lower if acoustic material is applied to the ceiling (acoustic deck, tectum type panels, etc.) which will help aid intelligibility of speech in the Gym, if desired.

4.2 Classrooms

For typical classrooms sized less than 10,000 cu. ft., the reverberation time requirement is a maximum 0.6 seconds for an unoccupied room. We recommend incorporating acoustical ceiling tile systems throughout each classroom. To meet the reverberation time requirement, the selected ACT should have a minimum NRC rating of 0.70.

4.3 Cafeteria

To limit noise buildup within the cafeteria, we recommend incorporating an acoustical ceiling tile system having a minimum NRC rating of 0.70.

5.0 Floor/Ceiling

5.1 1st Floor Music Room and Practice Cubicles

Please note that the Music Room is located directly underneath the Principal's Office on 1st Floor and therefore requires a minimum airborne sound separation rating of STC-60 between spaces. To achieve the STC vertical separation requirement between the Music Room and Principal's Office above, we recommend providing a sound barrier ceiling (two layers of gypsum board on isolation hangers with ACT below, similar to SCA detail 0926001a).

5.2 2nd Floor Gym Floating Floor

The 2rd Floor Gym will be located directly above sensitive receivers such as the Principal's Office, Guidance Suit, Library, and Tech Lab on the 1st Floor. To reduce impact noise transmission from basketballs, footfalls, and other anticipated gym activity, we recommend constructing a raised isolated floor, consisting of a 4-inch thick concrete slab on springs with minimum 1-inch static deflection.

6.0 Windows

SCA Design Requirements Section 1.3.1.9 requires that selected exterior windows meet a minimum OITC-28 (STC-35) rating. This rating can be achieved with an insulated glass unit consisting of 1/4" glass-1/2" airspace-1/4" glass.

Due to the close proximity of the elevated 7 train and general high levels of traffic activity surrounding the school, we will need to collect 24-hour environmental sound level data at the proposed site to determine if upgraded window types would be necessary at any location throughout the building.

7.0 Mechanical

7.1 Mechanical Equipment Sound Data

We request sound data for the following equipment types included in this project:

- Air Handling Units
- VAVs



- Split-Type Heat Pumps
- Condensing Units
- Fans
- Dry Coolers
- Supply and Exhaust Fans
- Generator

We will provide unit specific noise control requirements upon receipt of requested sound data.

7.2 Grilles & Diffusers

Supply diffusers and return grilles should be selected for 5 NC points lower than the recommended background noise level (Section 1.0). Slotted supply and returns should be selected 10 NC points lower.

7.3 Air Velocities

Duct air velocities should be limited to velocities listed in Table 8 to reduce noise from turbulent airflow.

Table 8: Maximum Recommended Duct Velocities

Duct Location	NC	Maximum Velocity (fpm)				
Duct Location	INC	Main Duct	Branch Duct	Run-out Duct		
In Shaft or	45	2800	2240	1400		
Above Drywall	40	2400	1920	1200		
Ceiling	35	2000	1600	1000		
Ceiling	30	1600	1280	800		
	45	2000	1600	1000		
Above ACT	40	1700	1360	850		
Ceiling	35	1400	1120	700		
	30	1200	960	600		
	45	1600	1280	800		
Euparad Duct	40	1400	1120	700		
Exposed Duct	35	1200	960	600		
	30	1000	800	500		

7.4 Vibration Isolation

The following recommendations are based on ASHRAE guidelines. All springs should be unhoused and incorporate a neoprene pad or cup. We recommend that floor-mounted springs be Mason Type SLFH or equal; where necessary, Mason Z-1225 seismic snubbers or restrained springs equal to Mason Type SLR should be used. Spring hangers should have a spring in series with neoprene and must allow for up to 30 degrees of misalignment; spring hangers should be Mason 30N or equal.

All connections to vibration isolated equipment should be flexible; this includes electrical service, plumbing/piping, and duct. Where possible, service loops should be provided. Duct connections should be canvas style, high pressure fluid lines should be twin sphere (e.g., Mason SFDEJ) or steel braided with a minimum length of 12-inches.

Specification Section 11503 Article 3.02 Paragraph F states that Chillers should be located on spring isolators with a minimum static deflection of 1-inch. This should be revised to require that Chillers be placed on spring type isolators with a minimum static deflection of 2-inches.



Table 5: Vibration Isolation Guidelines

Equipment Type	Isolator Type	Static Deflection (inches)
Fans (including AHU)	Spring & Neoprene	2.0
Dry coolers, Air-Cooled Condenser, Air- Cooled Chillers, Air-Cooled Equipment	Spring & Neoprene	2.0
Generator	Spring & Neoprene	4.0
Fan Coil Units/Heat Pumps	Spring & Neoprene	1.0
Hot Water Generators, Boilers (Skid Mounted)	Spring & Neoprene	1.0
Heat Exchangers**	Spring & Neoprene	1.0
Mechanical & Domestic Pumps ≥ 5hp*	Spring & Neoprene	1.0
Mechanical & Domestic Pumps less than 5hp	Double-deflection Neoprene	0.3

Centrifugal pumps should be mounted on isolated concrete inertia bases, according to Table 6.

Table 6: Inertia Base Guidelines

Motor Size (hp)	Minimum Concrete Thickness (inches)
5 to 20	6
21 to 50	8
51 to 75	10
> 75	12

Mechanical piping should be supported on/from vibration isolators for the greater distance of 50 feet or 100 pipe diameters from all isolated equipment and from pressure reducing valves. Piping greater than 2-inches in diameter should utilize spring isolators with a minimum 1-inch static deflection. Piping 2-inches or less in diameter should utilize double-deflection neoprene isolators with a nominal static deflection of 3/8-inch. Where piping is rigidly connected to vibration isolated equipment, the first two connection points should have isolators with static deflections equal to the equipment isolation.

7.5 Elevator Vibration Isolation

To control structure borne noise and vibration from elevator machinery, we recommend the following language to be added to the elevator specifications:

Provide effective sound isolation between machines, secondary deflector sheaves, controls, and solid state drive units and filters, from building structure to reduce noise transmission to occupied spaces. When operating per plans and specifications, the elevator system shall not generate noise levels in excess of NC-35 in occupied spaces and shall be free of pure tones. For the purposes of this specification, a pure tone shall be defined as a sound level in any one-third octave band that is greater than 5 dB above both adjacent one-third octave bands, in the range of 45 to 11,200 Hz. The following should be provided as a minimum:

- Support secondary deflector sheaves integrally from the unitized elevator base.
- Resiliently isolate the entire elevator/secondary deflector integral unitized base from the elevator machine room floor slab by means of eff effective neoprene-in-shear isolators having a minimum static defection of 3/8".

Heat exchangers should be mounted on isolators equal to the equipment/piping that it is connected to.



- Isolate the controls and power equipment from the building structure by means of approved neoprene-in-shear isolators having a minimum static deflection of 3/8".
- Isolate the hitch plates to the elevator cab by means of an elastomeric pad in compression designed to provide 1/8" deflection under dynamic loading.
- Conduits and electrical connections shall not be fastened to or supported by elevator machinery or solid state rectification units, except by approved flexible connections.
- Provide oversize, rubber type wheels for the guide wheels for both the elevator car and counterweight.

This concludes our comments at this time. Should you have any questions, comments, or concerns please do not hesitate to contact us.

Junior Associate

Best Regards,

Nicholas Altanian

Associate

CC:

John Dias/SCA

Jerry Moy/SCA

Gabriel Caesar/SCA

Justin Lau/Cerami & Associates



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SCA School Construction Authority

100 Cross Schools Rating System - 2016 NYC Green Schools Rating System - 2016 Architect: In-House (J. Moy) Preparer: J. Dias Phone: (718)472-8422

Project: HS	of American Studies	_
Address:Qu	ueens, NY 11101	
LLW: 1044	08	
Date	3/15/2017	

#	ITEM	INTENT	DESIGN CASE	DOCUMENTATION METHOD	PROJECT COMPLIES? (use tabs)
	PREREQUISITE				
R	Minimum Accessible Floors	of vertical circulation accessible to all	Building must have at least 1 main stair that enables occupants to travel between the building entrance floors and common use floors.	Floor Plans indicating main entrance and stairs.	YES
	Include seven (7) o	r more of the follow	ing features within the project.		
1	Floor re-entry	Make active modes of vertical circulation accessible at all floors	Classify regularly occupied floors for re-entry, allowing all building users to have access to and from these floors. Service floors do not need access for all users.	Floor plans indicating stairs.	Yes
2	Stair visibility at all floors	Visual connection to active modes of vertical circulation	Make accessible stair visible from corridor by providing: •vision panels of 10 SF at each door •side light of 10 SF. •providing open stair.	Floor plan, door schedule and door elevation	No
3	Stair connectivity to building occupants	Stair accessibility for building occupants	Provide access to at least one (1) open or interconnecting stair to 50% of occupied floors	Floor Plans indicating stairs.	Yes
4	Stair visibility from main lobby	Visual connection to main lobby	Position at least one active mode of vertical circulation to be visible from main building lobby with 25 feet maximum travel from edge of lobby to entry of active vertical circulation. No turns should be required to reach stairs from the lobby.	Floor plans indicating travel distance from main lobby to stair.	Yes
5	Location - visibility	Visual connection to active mode of vertical circulation	Position at least one active mode of vertical circulation within the field of vision for users when standing in front of motorized modes of vertical circulation.	Plan drawing showing stair immediately adjacent to elevator	Yes
6	Lighting	Make active vertical circulation areas a desirable space through enhanced lighting	Provide level of lighting in staircase consistent with or better than that provided for the building corridor.	Photometrics for stair and adjacent corridor.	Yes
7	Daylighting	Make active vertical circulation areas a desirable space through natural lighting	Provide windows/skylight of at least 8 SF at each floor level of the active circulation space.	Building elevation indicating window area at each floor @ stair.	No
8	Signage prompt at active vertical circulation	Encourage active modes of vertical circulation over motorized modes of vertical circulation	Include permanent signage promoting stair use at elevator call area and at outside of stair door at each floor of the active vertical circulation.	Floor plans indicating sign locations and signage detail.	Yes
9	Artwork	Make active vertical circulation areas a desirable space through the addition of artwork	Provide artwork in the active circulation area.	Artwork location	No
10	Recreational space	Provide opportunities for on-site recreation	For projects with 10 classrooms or more, provide an on-site recreational space with exercise opportunities for both staff and children. Exercise space must be at least 400 SF and include exercise equipment for use by at least 5% of FTE occupants. Gardening activity can count as staff active recreation space and equipment.	Floor plan showing exercise room with equipment layout, FTE calculation, and narrative. Site plan indicating garden area (if applicable).	Yes